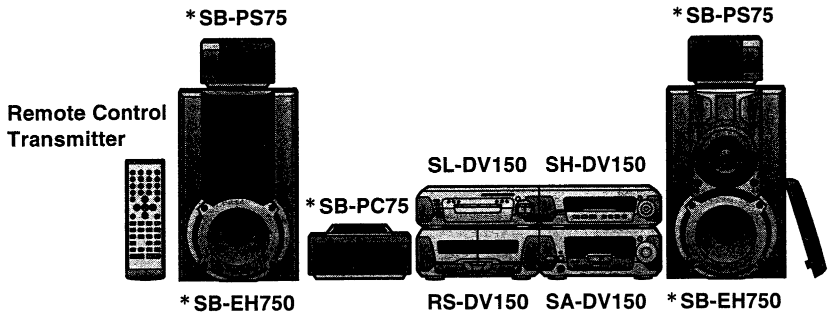
ORDER NO. AD9907165C2

Service Manual

Tuner/Amplifier

Tuner/Amplifier

SA-DV150



Colour
(S) .... Silver Type

Areas
(EB) ...... Great Britain.
(EG) ...... Europe.

System	SC-DV150
Sound Processor	SH-DV150
Tuner/Amplifier	**SA-DV150**
DVD Changer	SL-DV150
Cassette Deck	RS-DV150
Front Speakers*	SB-EH750
Center Speaker*	SB-PC75
Surround Speakers*	SB-PS75

* : Made in Singapore.

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Specifications

Amplifier Section

Power output (at HIGH terminal):	
DIN 1 kHz, THD 1 %, both channels driven;	2 × 70 W (6 Ω)
RMS 1 kHz, THD 10 %, both channels driven;	2 × 100 W (6 Ω)
Prologic mode (at HIGH terminal):	
DIN 1 kHz, THD 1 %,	
MAIN (both channels driven);	2 × 70 W (6 Ω)
CENTER;	45 W (8 Ω)
SURROUND;	2 × 25 W (8 Ω)
RMS 1 kHz, THD 10 %,	
MAIN (both channels driven);	2 × 100 W (6 Ω)
CENTER;	60 W (8 Ω)
SURROUND;	2 × 30 W (8 Ω)
PMPO 1 kHz:	3000 W (MAIN 6 Ω, CENT. 6 Ω, SURR. 8 Ω)
Total harmonic distortion:	
Rated power at 1 kHz;	1 % (6 Ω)
Half power at 1 kHz;	0.1 % (6 Ω)
Load impedance:	
MAIN (HIGH/LOW);	total impedance 6 Ω
CENTER;	8 Ω
SURROUND;	8 Ω
S.WOOFER:	
Center frequency;	70 Hz
LEVEL (VOL–20 dB):	MID +8 dB, MAX +12 dB

FM tuner Section

Frequency range:	87.50 – 108.0 MHz (0.05 MHz steps)
Sensitivity:	1.8 μV (IHF usable)
S/N26 dB;	1.5 μV
S/N:	
MONO;	70 dB (75 dB, IHF)
Antenna terminal(s):	75 Ω (unbalanced)

AM tuner Section

Frequency range:	522 – 1629 kHz (9 kHz steps) 520 – 1630 kHz (10 kHz steps)
Sensitivity (S/N 20 dB):	500 μV/m

Timer Section

Clock:	Quartz - lock type
Function:	Play timer (1 time, daily), Rec timer (1 time, daily), Sleep (120 min, 30 min intervals)
Setting intervals (Play/Rec):	1 minute – 23 hours 59 minutes (1 min intervals)

General

Power supply:	
(EB) area;	AC 230 – 240 V, 50 Hz
(EG) area;	AC 230 V, 50 Hz
Power consumption:	230 W
Normal mode;	11 W
ECO mode;	0.6 W
Dimensions (W×H×D):	293x118.5x342.5 mm
Weight:	5.3 kg

Notes: Specifications are subject to change without notice.
Weight and dimensions are approximate.
Total harmonic distortion is measured by the digital spectrum analyzer.

⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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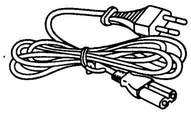
Contents

Page
Accessories 2
Before Repair 2
Protection Circuitry 2
Caution for AC Mains Lead 3
Location of Controls 4
Installation 5
Connections .... 6~8
Setting the Time 9
ECO mode 9
Playing Discs 10,11
Using GUI Screens .... 12~14
Using the Timer .... 15~17
Initial Settings for DVD/Video CD/CD Changer .... 18~21

Page
Operation Checks and
Component Replacement Procedures .... 22~24
To Supply Power Source 25
Self-Diagnostic Mode 26
Schematic Diagram .... 27~36
Printed Circuit Board Diagram .... 37~41
Wiring Connection Diagram 42
Type Illustration of IC's, Transistors and Diodes 43
Terminal Function of IC's 44
Block Diagram .... 45~49
Replacement Parts List .... 50~53
Cabinet Parts Location 54
Packaging 55

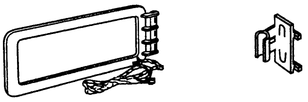
Accessories

- **AC power supply cord**
  (EB) area : (RJA0053-2X) .... 1 pc.
  (EG) area : (RJA0019-X) .... 1 pc.

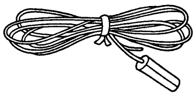


Note: The illustration shows (EG) area cord.

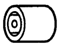
- **AM loop antenna set**
  (RSA0022-J) .... 1 pc.



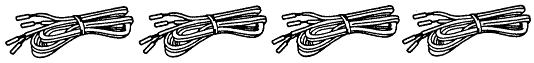
- **FM indoor antenna**
  (RSA0007) .... 1 pc.



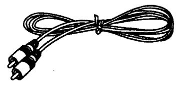
- **FM antenna adaptor for (EB) area only**
  (SJP9009) .... 1 pc.



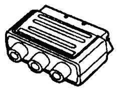
- **Speaker cords**
  (REE0393) .... 2 pcs.
  (REE0853) .... 2 pcs.



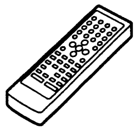
- **Video cable**
  (RJL1P019B15) .... 1 pc.



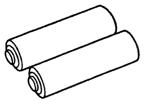
- **RCAJ adaptor**
  (VFA0151-1) .... 1 pc.



- **Remote control transmitter**
  (RAK-EHA20WH) .... 1 pc.



- **Batteries**
  (UM-3, "AA", R6/LR6) .... 2 pcs.
  Note: These are available on sales route.



Before Repair

(1) Turn off the power supply. Using a 10 Ω, 10 W resistor, connect both ends of power supply capacitors (C701, C703 and C702, C704) in order to discharge the voltage.
(2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 230/240V.

Power supply voltage	AC 230 V, 50 Hz	AC 240 V, 50 Hz
Consumed current	130 ~ 380 mA	

Protection Circuitry

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The functions of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

Note:
When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ Caution for AC Mains Lead

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

> **CAUTION!**
> IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
> THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

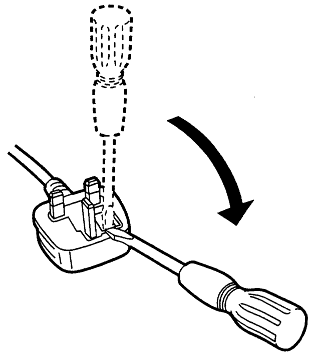
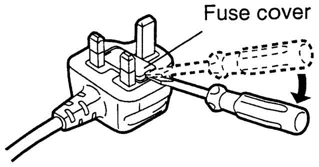


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

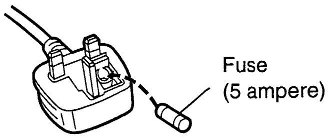
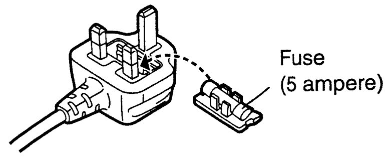
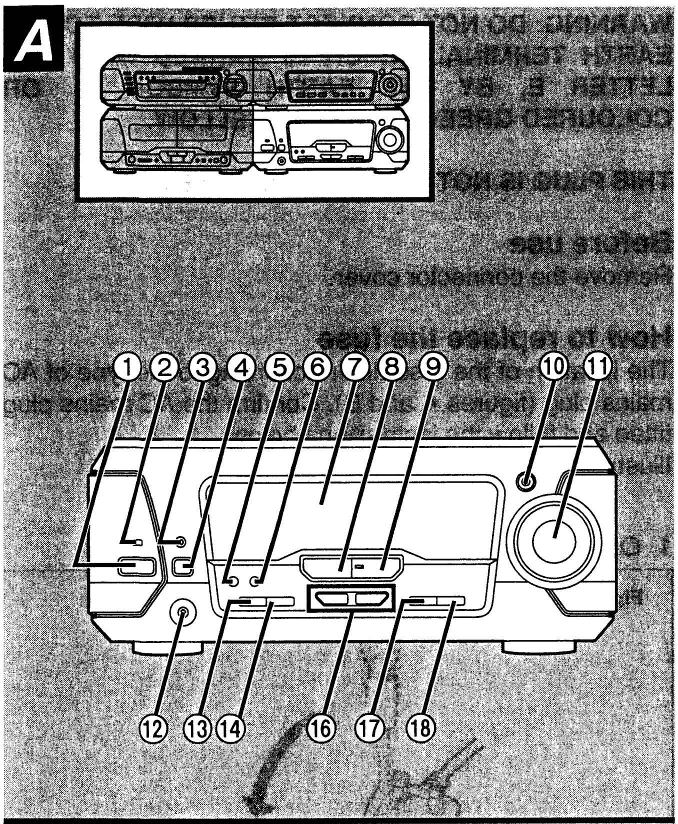


Figure B



■ Location of Controls

A


①
②
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⑥
⑦
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⑩
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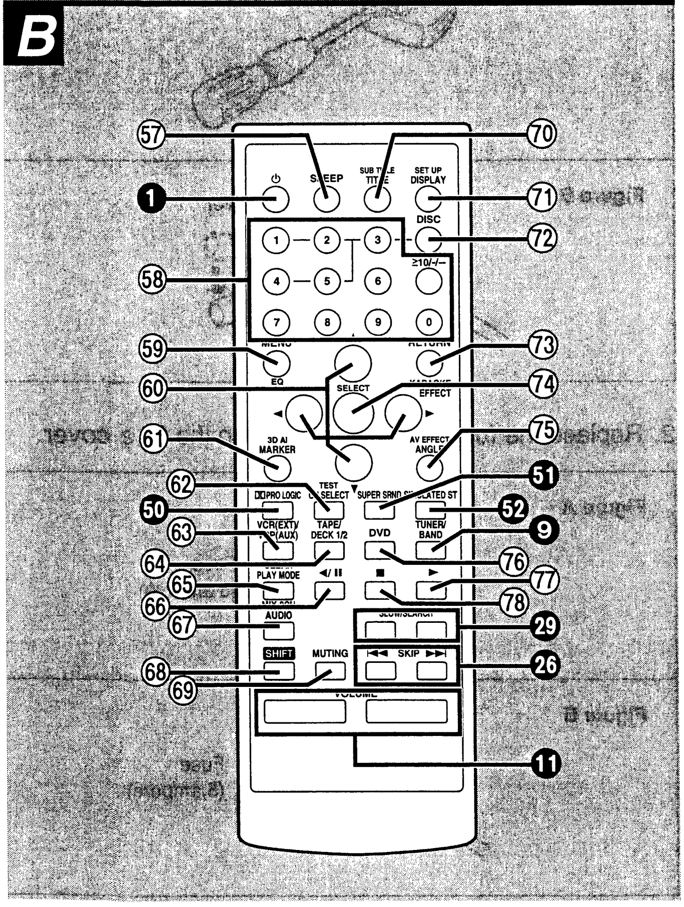
⑰
⑱

B


(57)
(70)
❶
(71)
(72)
(58)
(59)
(73)
(60)
(74)
(61)
(75)
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(50)
(52)
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❾
(64)
(76)
(65)
(77)
(66)
(78)
(67)
(29)
(68)
(26)
(69)
⓫
SLEEP
SUB TITLE
SET UP DISPLAY
DISC
≥10/-/--
MENU
RETURN
EQ
SELECT
KARAOKE EFFECT
3D AI MARKER
AV EFFECT ANGLE
TEST SELECT
PRO LOGIC
SUPER SRND
SIMULATED ST
VCR(EXT)/VDP(AUX)
TAPE/DECK 1/2
DVD
TUNER/BAND
PLAY MODE
◄/II
■
►
SLOW/SEARCH
AUDIO
SHIFT
MUTING
SKIP
VOLUME

Tuner amplifier

A

① **Standby/on switch (⏻/I)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② **Standby indicator (⏻)**
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

③ **Play timer/record timer button and indicator (⏲ PLAY/⏲ REC)**

④ **ECO mode button (ECO)**

⑤ **Clock/timer, demo button (CLOCK/TIMER, -DEMO)**

⑥ **FM mode select button (FM AUTO/MONO)**

⑦ **Display**

⑧ **Source input select button (INPUT SELECTOR)**

⑨ **Tuner/band select button and indicator (TUNER/BAND)**

⑩ **Super woofer button and indicator (S.WOOFER)**

⑪ **Volume control (VOLUME)**

⑫ **Headphones jack (PHONES)**

⑬ **Tuning mode select button (TUNING MODE)**

⑭ **Set button (SET)**

⑯ **Tuning buttons (∨, ∧ TUNING)**

⑰ **RDS PS display mode select button (RDS DISP MODE – PS)**

⑱ **RDS PTY display mode select button (RDS DISP MODE – PTY)**

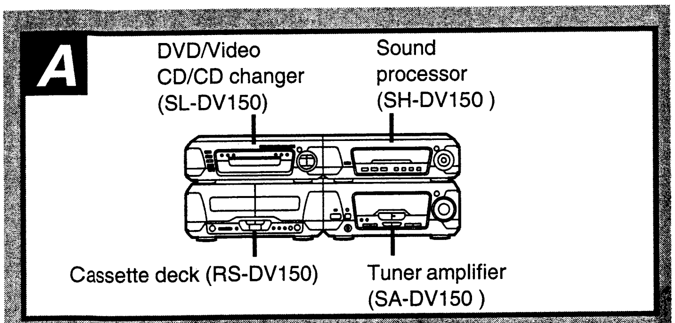
Remote control

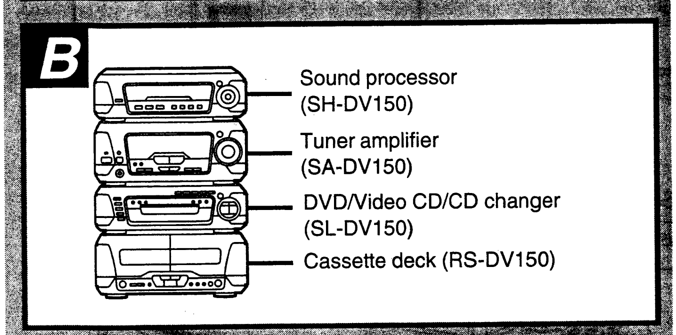
B

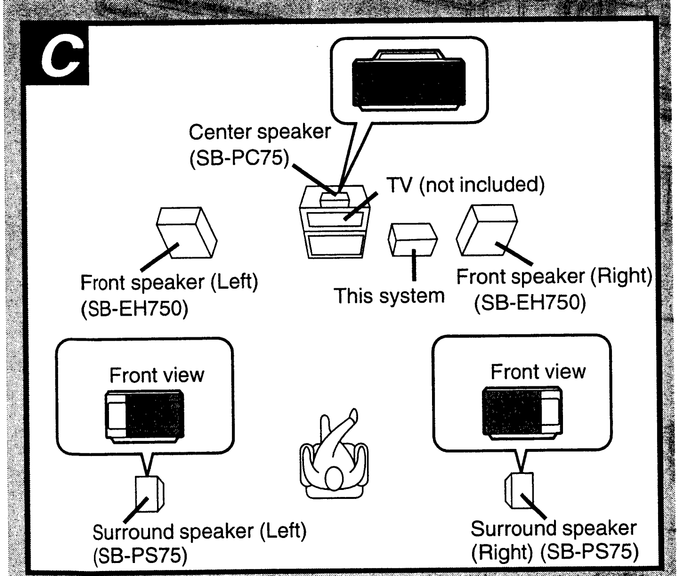
Buttons such as ❶ function in exactly same way as the buttons on the main unit.

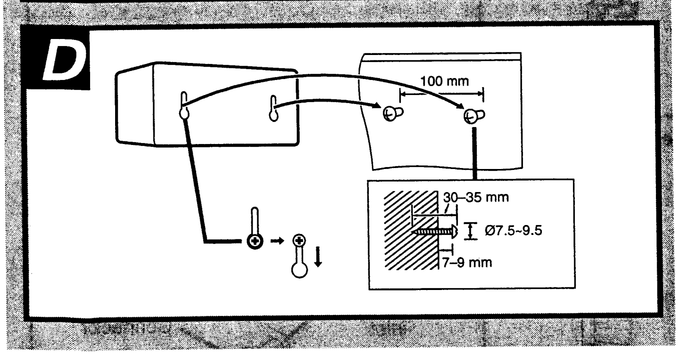
(57) **Sleep timer button (SLEEP)**
(58) **Numeric buttons (1–9, 0, ≥10/-/--)**
(59) **Menu button (MENU)**
(60) **Cursor buttons (◄, ▲, ►, ▼)**
(61) **Marker button (MARKER)**
(62) **Speaker channel select button (CH SELECT)**
(63) **Input select button [VCR (EXT)/VDP (AUX)]**
(64) **Tape/deck 1/2 select button (TAPE/DECK 1/2)**
(65) **Play mode select button (PLAY MODE)**
(66) **Tape reverse playback/disc pause button (◄/II)**
(67) **Audio select button (AUDIO)**
(68) **Shift button (SHIFT)**
(69) **Muting button (MUTING)**
(70) **Title select button (TITLE)**
(71) **Display select button (DISPLAY)**
(72) **Disc select button (DISC)**
(73) **Return button (RETURN)**
(74) **Select button (SELECT)**
(75) **Angle select button (ANGLE)**
(76) **DVD button (DVD)**
(77) **Disc play/tape forward playback button (►)**
(78) **Disc/tape stop button (■)**

■ Installation


A
DVD/Video CD/CD changer (SL-DV150)
Sound processor (SH-DV150)
Cassette deck (RS-DV150)
Tuner amplifier (SA-DV150)


B
Sound processor (SH-DV150)
Tuner amplifier (SA-DV150)
DVD/Video CD/CD changer (SL-DV150)
Cassette deck (RS-DV150)


C
Center speaker (SB-PC75)
TV (not included)
Front speaker (Left) (SB-EH750)
This system
Front speaker (Right) (SB-EH750)
Front view
Front view
Surround speaker (Left) (SB-PS75)
Surround speaker (Right) (SB-PS75)


D
100 mm
30–35 mm
Ø7.5–9.5
7–9 mm

Locating the components

Side-by-side set-up A
Stacking B

Placement of center/surround speakers C

Center speaker

Place the center speaker above a TV, as close to it as possible.

Note
Do not place the center speaker on this system as sound quality will be affected.

Surround speakers

We recommend that surround speakers be placed on the side of or slightly behind the listener, and about one meter higher than ear level.
Place the speakers with the Technics logo facing toward the listening position.

For your reference
Even if you are forced to put your surround speakers on top of your front speakers, this unit still allows you to enjoy surround effects

Attaching to a wall D
Set speaker onto screws and slide through bracket to lock into position.

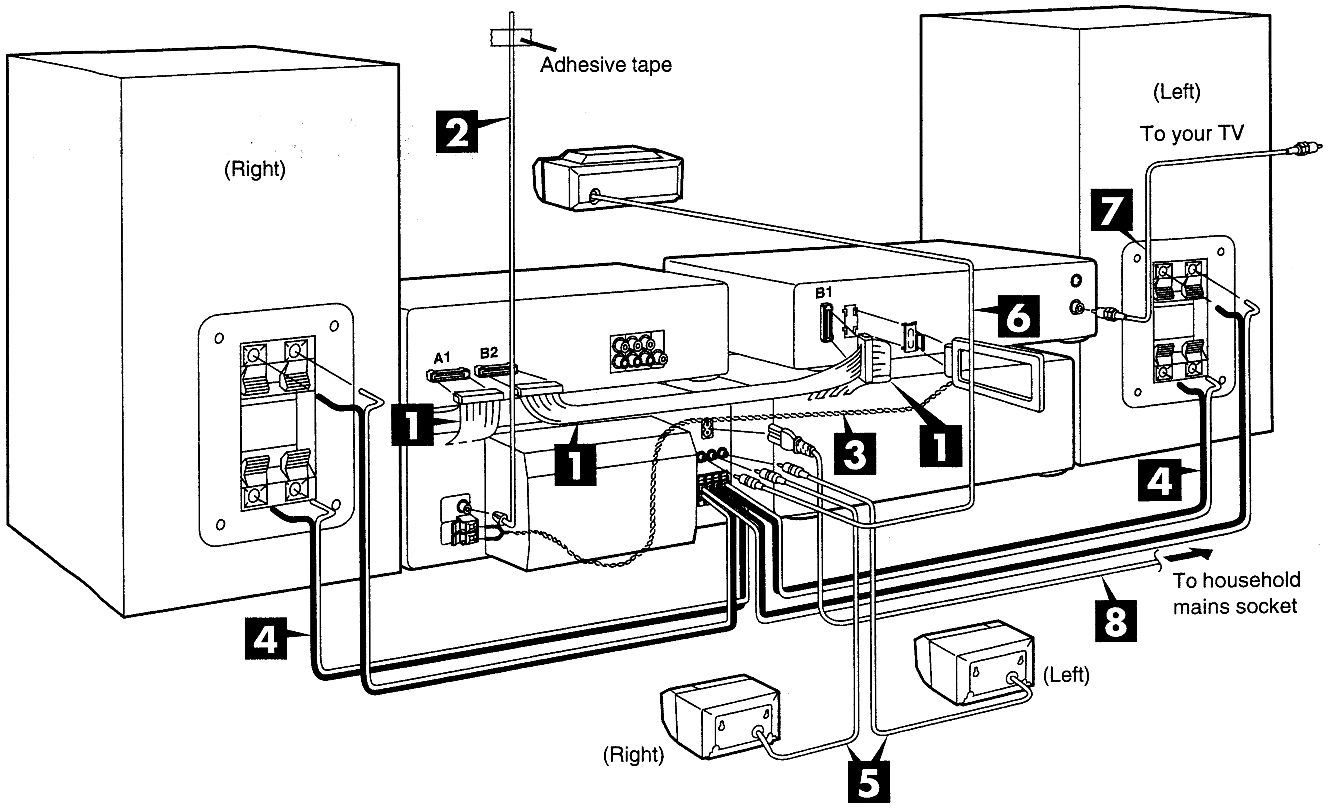
Note
The wall or pillar on which the speaker systems are to be attached should be capable of supporting a weight of 5 kg.

Caution
- **Use the speakers only with the recommended system. Failure to do so may lead to damage to the amplifier and/ or the speakers, and may result in the risk of fire.**
- **Do not attempt to attach these speakers to walls using methods other than those described in this manual.**

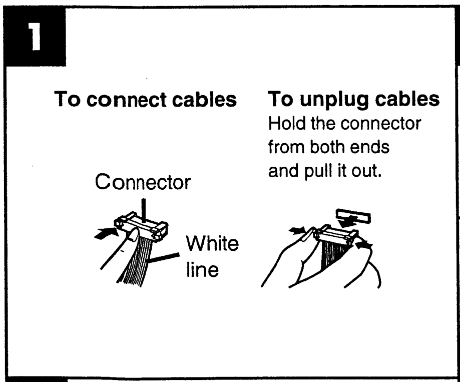
Note
The front and center speakers are made so they can be used in close proximity to the TV, but irregular coloring may result due to how the system is placed. If such distortion occurs, turn off the TV for between 15 and 30 minutes. The demagnetizing function of the TV will eliminate the distortion. If the irregular coloring is still visible, then move the speaker further away from the TV.

■ Connections

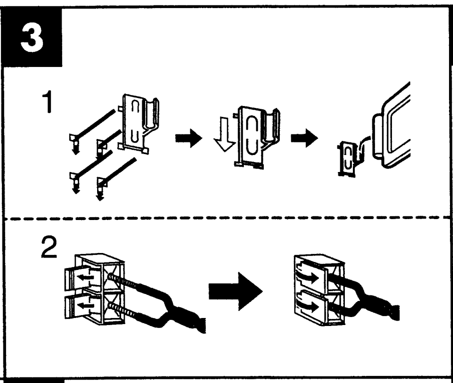
Connect the AC mains lead after you have connected all other cables.


Adhesive tape
2
(Right)
(Left)
To your TV
7
B1
6
A1
B2
1
1
3
1
4
4
To household mains socket
8
(Left)
(Right)
5

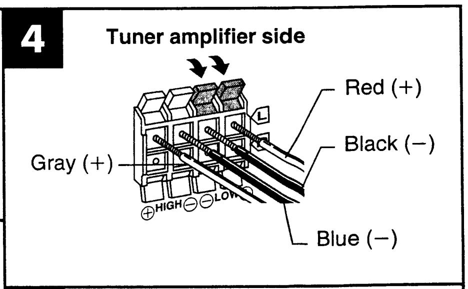
1


To connect cables
To unplug cables
Hold the connector from both ends and pull it out.
Connector
White line

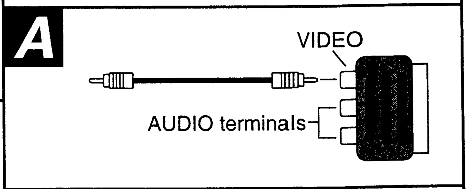
3



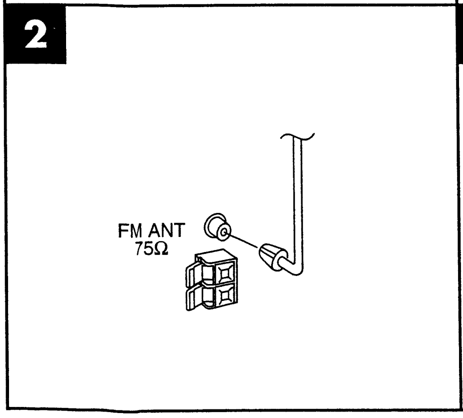
4


Tuner amplifier side
Red (+)
Black (−)
Gray (+)
Blue (−)
HIGH
LOW

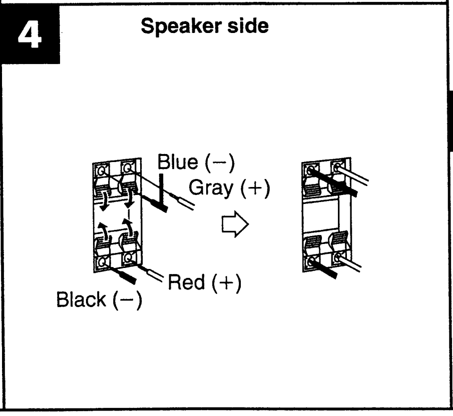
A


VIDEO
AUDIO terminals

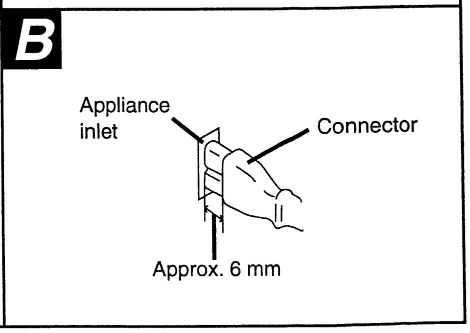
2



4


Speaker side
Blue (−)
Gray (+)
Black (−)
Red (+)

B


Appliance inlet
Connector
Approx. 6 mm

1 Connect the flat cables.

1. Connect the shorter flat cable from the tuner amplifier to terminal A1 on the sound processor.
2. Connect the longer flat cable from the cassette deck to terminals B1 and B2.

After connection:
Keep cables as flat against the back of the unit as possible.

2 Connect the FM indoor antenna.

Tape the antenna to a wall or column, in a position where radio signals are received with the least amount of interference.

3 Connect the AM loop antenna.

Note
To minimize noise pickup, bundle the loop antenna cord using tape or the like to keep the flat cables away from the AM loop antenna cord.

4 Connect the right (R) and left (L) front speaker cables.

Use only the supplied front speakers.
The combination of the main unit and front speakers provide the best sound. Using other front speakers can damage the unit and sound quality will be negatively effected.

Note
Be sure to connect only positive (red or gray) wires to positive (+) terminals and negative (black or blue) wires to negative (−) terminals.

5 Connect the surround speaker cables.

6 Connect the center speaker cable.

7 Connect the video cable(s).

Use the RCAJ adaptor (included) if your TV has 21-pin SCART terminal A
You do not have to connect anyting to the AUDIO terminals.

8 Connect the AC power supply cord.

Insertion of Connector B
Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.

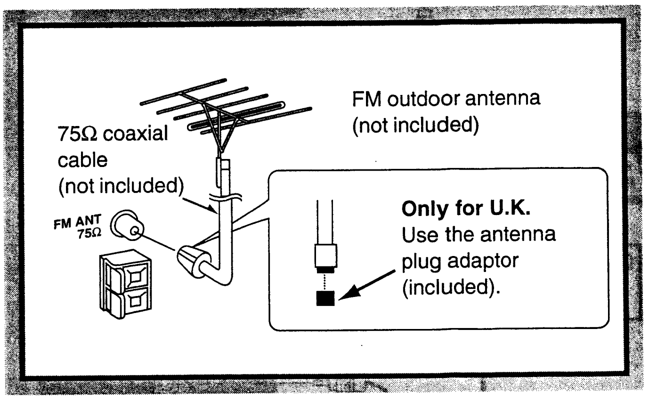
For your reference
Information you enter into the unit's memory, except for the time, remains intact for up to two weeks after the AC power supply cord is disconnected.

Optional antenna connections

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

FM outdoor antenna (not included)

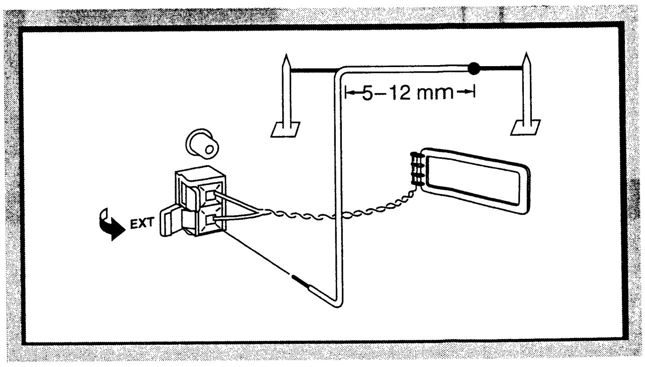
Remove the FM indoor antenna.

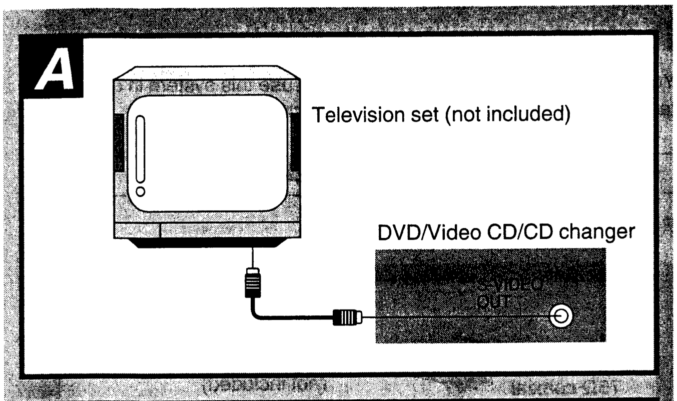

75Ω coaxial cable (not included)
FM outdoor antenna (not included)
FM ANT 75Ω
Only for U.K.
Use the antenna plug adaptor (included).

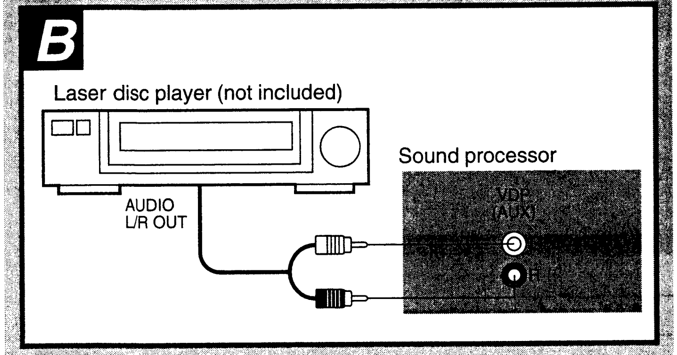
AM outdoor antenna (not included)

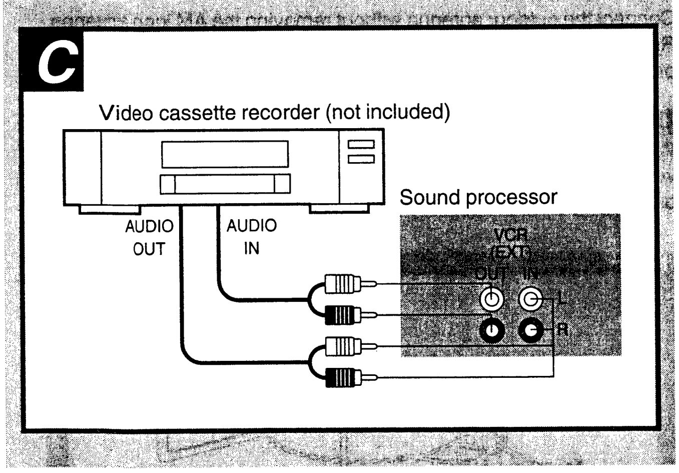
Connect the outdoor antenna without removing the AM loop antenna. Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.

Note
When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.



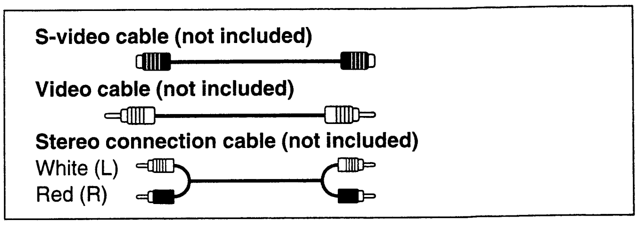

A
Television set (not included)
DVD/Video CD/CD changer
S-VIDEO OUT


B
Laser disc player (not included)
AUDIO L/R OUT
Sound processor
VDP (AUX)
R


C
Video cassette recorder (not included)
AUDIO OUT
AUDIO IN
Sound processor
VCR (EXT)
OUT
IN
L
R

External unit connections

- Make sure that the power supply for all components has been turned off before making any connections.
- For details, refer to the operating instructions of the units which are to be connected.
- All peripheral components and cables sold separately.



S-video cable (not included)

Video cable (not included)

Stereo connection cable (not included)

White (L)

Red (R)

Television set (with S-VIDEO terminal) A

To enjoy better picture clarity, connect a S-video cable (not included).

Laser disc player B

Video cassette recorder C

Note

You cannot record copy-protected discs to the video cassette recorder.

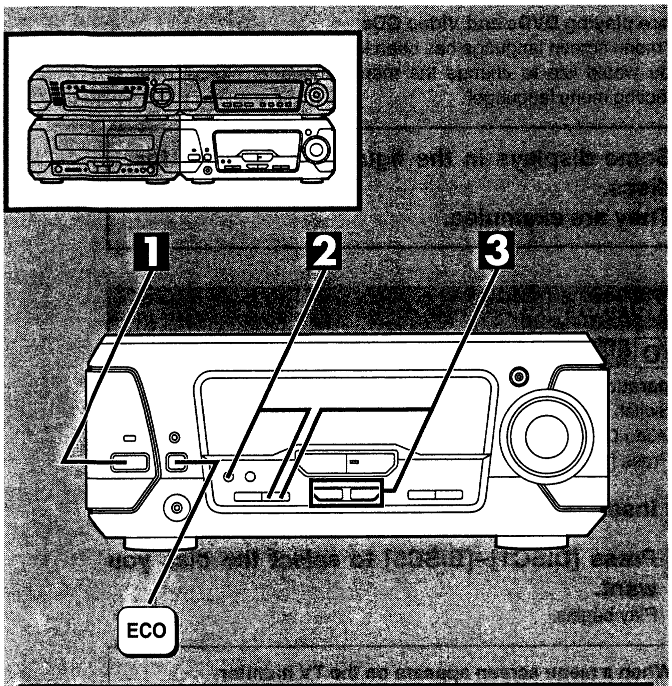
Even if the recording is completed, the video tape will have much noises.

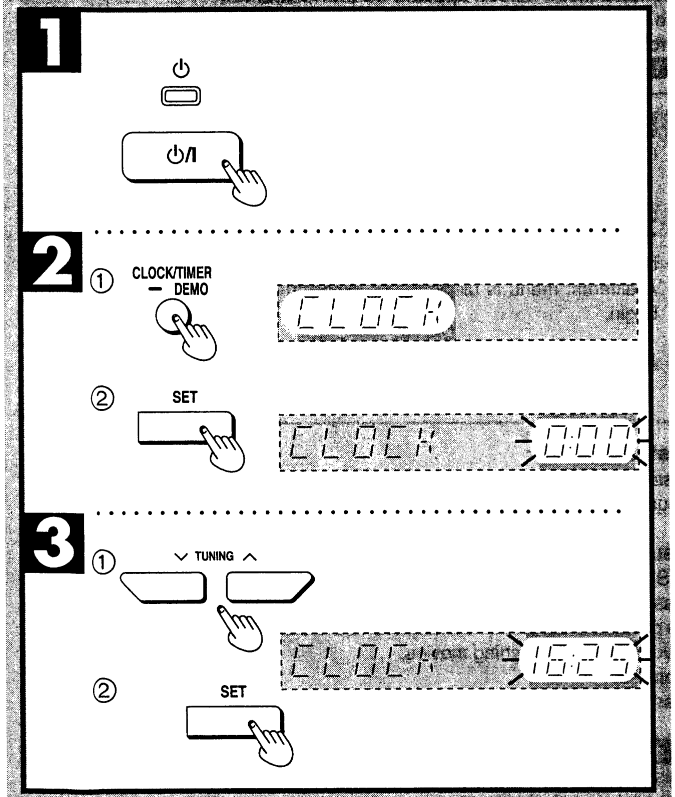
To improve the sound effect

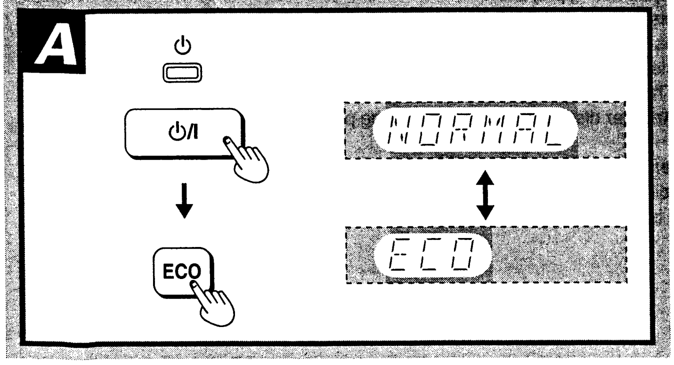
The front speakers have built-in subwoofers, but it is possible to connect another subwoofer (not included) to the SUBWOOFER OUT terminal on the rear panel of the sound processor.

If you have connected the subwoofer, press and hold [S.WOOFER] for about 2 seconds so "SUB W ON" is shown on the display.

■ Setting the Time







This is a 24-hour display clock.
The figure shows how to set the time for 16:25.

1 Press [⏻/I] to turn the unit on.

2 ① Press [CLOCK/TIMER, –DEMO] to show "CLOCK".

Every time you press the button;
CLOCK→◷ PLAY→◷ REC→Original display

Within 5 seconds:

② Press [SET].

3 ① Press [TUNING (∨ or ∧)] to set the present time on the display.

The time display can be changed in one minute units by tapping the buttons, and quickly by holding down the buttons.

② Press [SET].

The display will return to the previous display after about 3 seconds.

To display the clock
Press [CLOCK/TIMER, –DEMO].
The time is shown for about 5 seconds.
The time is shown constantly when the unit and ECO mode are off.

■ ECO mode A

Turn ECO mode on to reduce the amount of energy consumed while the unit is in standby mode.
This mode is set to on at the time of purchase.

	NORMAL (off)	ECO (on)
Display	Clock display, etc.	Blank
Power consumption in standby mode	• 11 W	• 0.6 W

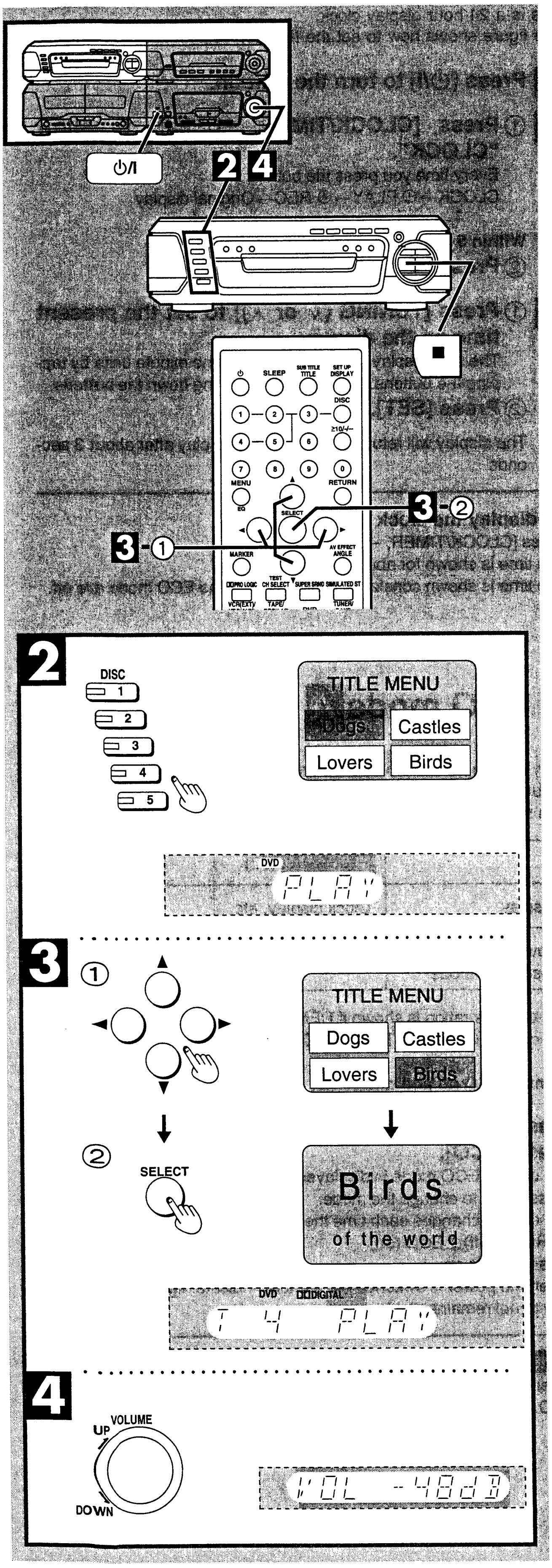
The demonstration is shown if DEMO is on, regardless of the condition of the ECO mode. Turn DEMO off if ECO is used.

Turning ECO on and off:

Press [⏻/I] to turn the unit on.
Press [ECO].
The current ECO mode is displayed.
Press again to change the mode.
The display changes each time the button is pressed:
NORMAL (off)⇄ECO (on)
When ECO is on:
When the power is switched off, standby indicator lights, but the display panel remains blank.

Note
When the unit is off, the mode can be switched from NORMAL to ECO, but not the other way.

■ Playing Discs


⏻/I
2 4
■
SLEEP
SUB TITLE TITLE
SET UP DISPLAY
DISC
≥10/-/--
MENU
RETURN
EQ
SELECT
MARKER
AV EFFECT ANGLE
3-①
3-②
2
DISC
1
2
3
4
5
TITLE MENU
Dogs
Castles
Lovers
Birds
DVD
PLAY
3
①
②
SELECT
Birds
of the world
DVD DIGITAL
T 4 PLAY
4
VOLUME
UP
DOWN
VOL -40dB

Before playing DVDs and Video CDs
The menu screen language has been factory preset to English.
If you would like to change the menu language, please refer to "Selecting menu language".

**Some displays in the figure are different for discs.
They are examples.**

Normal play

DVD **V-CD** **CD**

Preparation:

① Switch the TV on and set it to "Video" input when playing DVDs or video CDs.

② Press [⏻/I] to turn the unit on.

1 Insert discs in the trays.

2 Press [DISC1]–[DISC5] to select the disc you want.

Play begins.

When a menu screen appears on the TV monitor
In case of interactive DVDs or Video CDs with playback control, a menu screen appears on the TV monitor. Perform step 3 as follows.

3 by remote control only

① Press one of the cursor buttons (◀,▶,▼,▲) to select the menu items.

② Press [SELECT].

You can select the desired item by pressing the numeric button(s).
A different menu is displayed or play of the selected item will begin.

4 Adjust the volume.

To stop the disc:
Press [■].
Resume function is activated.

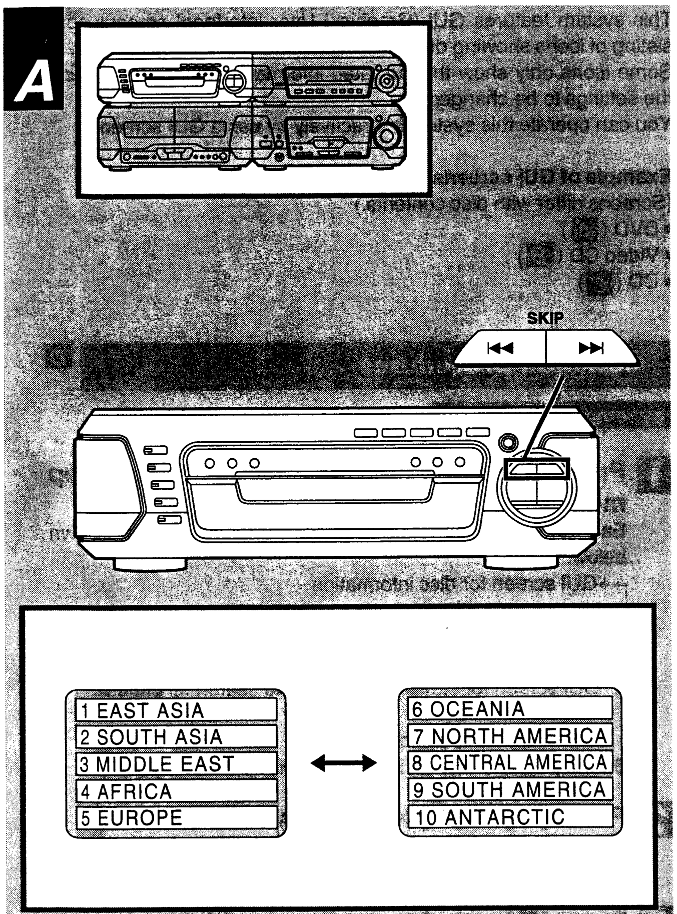
Resume function
"RESUME" is displayed when the Resume function is active.
Press [▷] and play resumes from the point it was last stopped at.
This position is kept in the memory even if the unit is turned off, so it is convenient when watching movies.

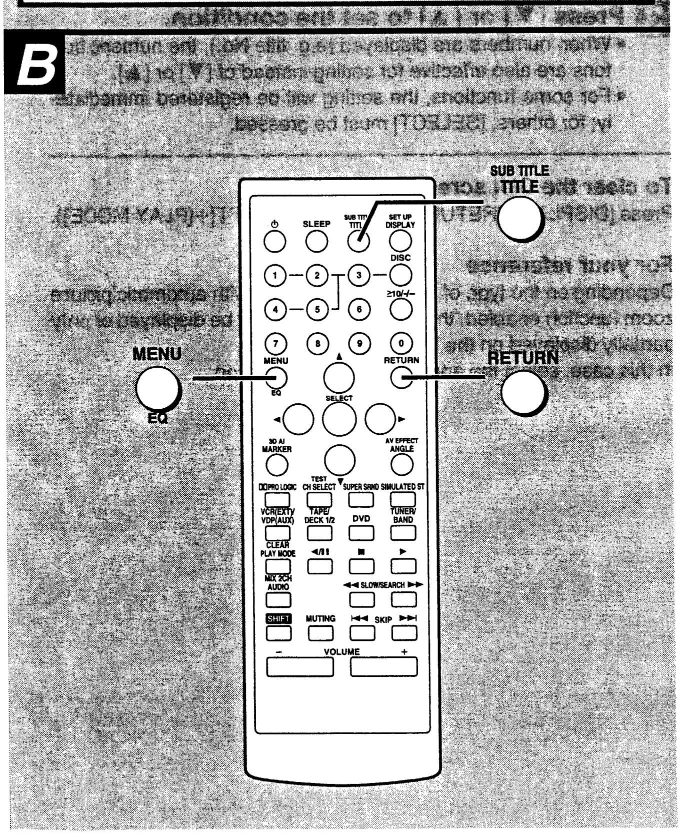
To cancel
Press [■] while the unit is stopped.

Note

- This function only works on discs that have their elapsed time displayed during playback.
- This function may not work with some DVDs.
- Ensure this function has been canceled before recording.
- This function is automatically canceled by the following.
  - The tray is opened.
  - Another disc is moved to the playing position.

When "NO DISC" appears on the display
It indicates there is no disc on the tray in the playing position or the disc is placed in upside down (and it is a single sided disc).


A
SKIP
1 EAST ASIA
2 SOUTH ASIA
3 MIDDLE EAST
4 AFRICA
5 EUROPE
6 OCEANIA
7 NORTH AMERICA
8 CENTRAL AMERICA
9 SOUTH AMERICA
10 ANTARCTIC


B
SUB TITLE
TITLE
MENU
EQ
RETURN
SLEEP
SET UP
DISPLAY
DISC
SELECT
3D AI
MARKER
AV EFFECT
ANGLE
DVD
TUNER/
BAND
SKIP
VOLUME

About menu operations

When the menu continues onto another screen A

After step 2 on the previous page, press [SKIP ▶▶I].

(Skip buttons may not be effective depending on the disc.)

- To return to the previous menu screen
  Press [I◀◀ SKIP].
- For operation, refer also to the jacket of the disc concerned.

To return to the menu screen B

by remote control only

With some discs, playback may start without showing the menu screen.

To show the menu screen, do the following.

- **DVD**
  Press [TITLE], [MENU] or [RETURN].
  (Which button is pressed depends on the disc.)
- **Video CD**
  Press [RETURN].

Note

The disc continues to rotate while the menu is displayed even after the unit has finished playing a particular item. When no further selections are to be played, be sure to press [■] to clear the menu display.

To enjoy Video CDs with playback control without using menus

Refer to the disc jacket concerned for the track numbers.

① Press [■] after the menu screen appears.
"PBC" disappears on the display.

② Press the numeric button(s) to select the desired track.
Play begins.

Chapter Play function (DVD only)

This function plays a few seconds of each chapter from the beginning of the title up to the point where operation was stopped at the second chapter or more.

When you play a DVD with chapters recorded on it, stop the disc:

① Press [▷] (play).
The message, "PRESS PLAY to chapter preview", is shown on the TV.

② Press [▷] (play) again while the message is on the TV.

After the chapter play, normal play resumes from the point that the disc was stopped.

When "⃠" appears on the TV monitor when a button is pressed

It indicates the corresponding operation is prohibited by the unit or the disc.

When "96 kHz 24 bit" appears on the display

This message indicates that the disc being played is a disc with high quality sound recorded with a sampling frequency of 96 kHz and 24 bits.

When "NO PLAY" appears on the display

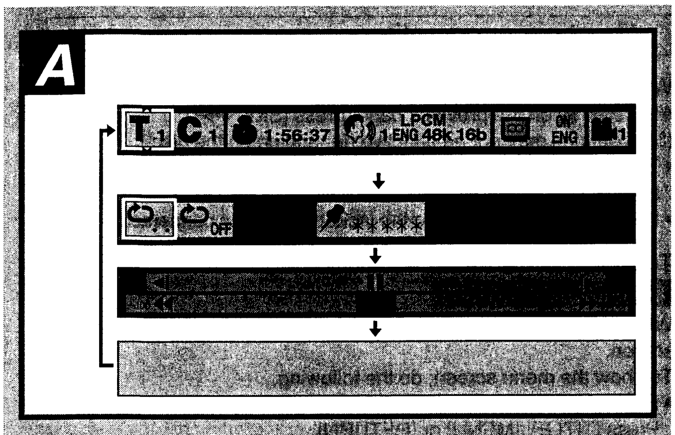
It indicates that the disc being played does not correspond to the system, disc play cannot be done.

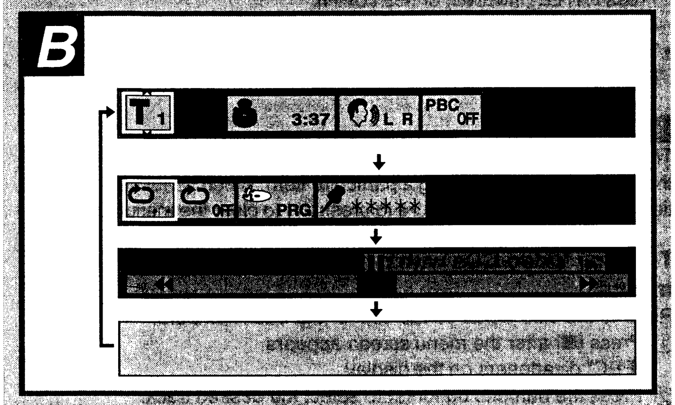
■ Using GUI Screens

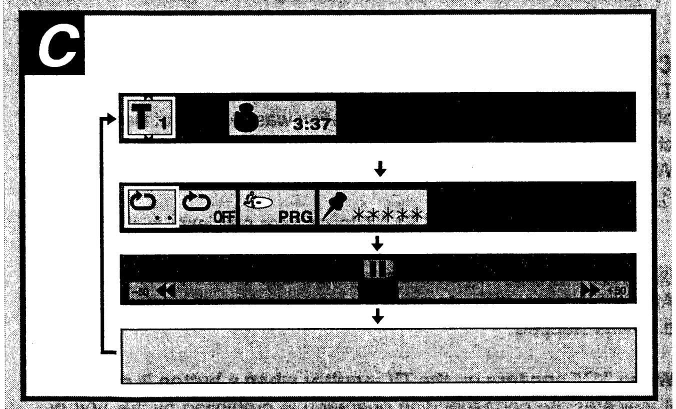
This system features GUI (Graphical User Interface) screens consisting of icons showing disc information and changer information. Some icons only show the indicated information. Other icons allow the settings to be changed.
You can operate this system interactively by using GUI screens.

Example of GUI screens
(Screens differ with disc contents.)

- DVD (A)
- Video CD (B)
- CD (C)


A
T 1
C 1
1:56:37
LPCM
1 ENG 48k 16b
ON
ENG
1
OFF
*****

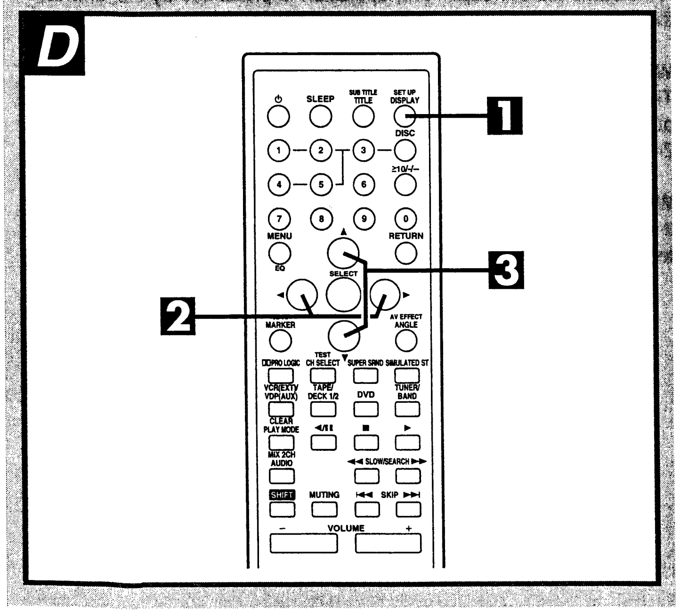

B
T 1
3:37
L R
PBC
OFF
OFF
PRG
*****


C
T 1
3:37
OFF
PRG
*****

Common procedures

D

by remote control only


D
1
2
3
SLEEP
SUB TITLE
TITLE
SET UP
DISPLAY
DISC
≥10/-/--
MENU
RETURN
EQ
SELECT
MARKER
AV EFFECT
ANGLE
TEST
CH SELECT
SUPER SRND
SIMULATED ST
VCR/EXT/
VDP(AUX)
TAPE/
DECK 1/2
DVD
TUNER/
BAND
CLEAR
PLAY MODE
MIX 2CH
AUDIO
SLOW/SEARCH
SHIFT
MUTING
SKIP
VOLUME

1 Press [DISPLAY] during play or in the stop mode.

Each time this button is pressed, the screen changes as shown below.

→GUI screen for disc information
↓
GUI screen for changer information
↓
GUI screen for slow-motion play and search function.
↓
GUI screen is cleared

Some functions cannot be accessed in the stop mode.

2 Press [◀] or [▶] to select the desired item.

The currently selected item is indicated by the yellow frame on the GUI screen.

3 Press [▼] or [▲] to set the condition.

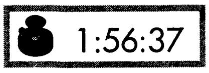
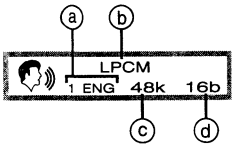
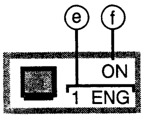
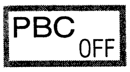
- When numbers are displayed (e.g. title No.), the numeric buttons are also effective for setting instead of [▼] or [▲].
- For some functions, the setting will be registered immediately; for others, [SELECT] must be pressed.

To clear the GUI screen
Press [DISPLAY], [RETURN] or [CLEAR] ([SHIFT]+[PLAY MODE]).

For your reference
Depending on the type of DVD discs and a TV with automatic picture zoom function enabled, the GUI screen may not be displayed or only partially displayed on the TV screen.
In this case, select the appropriate TV screen type.

Detailed descriptions of each GUI icon

Screen for disc information

	Remarks	Changing method
A	To show the current title No. (DVD) or track No. (Video CD/Audio CD)	[▼] [▲] or Numeric/[SELECT] *1
B	To show the current chapter No.	DVD only [▼] [▲] or Numeric/[SELECT]
C 	To show the elapsed time (DVD/Video CD/CD) and to select the scene by the elapsed time (DVD only)	Numeric/[SELECT]*2
D 	ⓐ To show the current audio soundtrack language and No.	DVD only [▼] [▲] or Numeric
	ⓑ To show the audio attribute (type) of the current disc •LPCM (Linear PCM), MPEG (MPEG audio) or DD Dolby Digital ⓒ To show the audio attribute (sampling frequency or number of channels) of the current disc •For Linear PCM disc: 48 kHz or 96 kHz •For Dolby Digital disc: 1ch to 5.1ch •For MPEG audio disc: 1ch to 2ch ⓓ To show the audio attribute (bit No.) of the current disc •For Linear PCM disc: 16 bit to 24 bit	DVD only —
E 	ⓔ To show the current subtitle language and No.	DVD only [▼] [▲] or Numeric
	ⓕ To display/clear subtitles	DVD only [▼] [▲]
F	To show the current angle No.	DVD only [▼] [▲] or Numeric
G	To show the current audio mode •LR, L or R	[▼] [▲] or Numeric
H 	To show whether Video CD menu play is ON or OFF	V-CD only —

- [▼] [▲]: press the cursor buttons on the remote control. Numeric: press the numeric buttons.

*1 The track number cannot be selected during menu play of the Video CD.

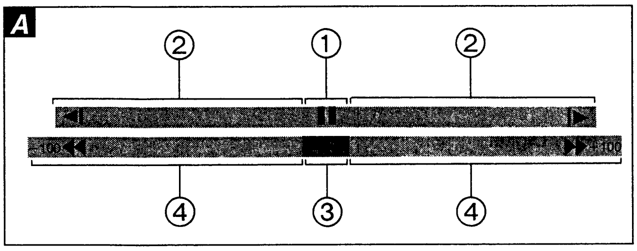
*2 This function does not work with some DVDs.
During Video CD/CD play, display is changed by the cursor buttons [▼] or [▲].
Elapsed playing time→Remaining time of track→Remaining time of the disc

Language abbreviations

For the language abbreviations used for the audio soundtrack and subtitle language icons, see the following table.

ENG	English	FRA	French	DEU	German
ITA	Italian	ESP	Spanish	NLD	Dutch
SVE	Swedish	NOR	Norwegian	DAN	Danish
POR	Portuguese	RUS	Russian	JPN	Japanese
CHI	Chinese	KOR	Korean	MAL	Malay
VIE	Vietnamese	THA	Thai	*	Others

Screen for slow-motion play and search function, etc



① Still/Pause

Press [▲] to select "II".

② Slow-motion play

1. Press [▲].
2. Press [◀] or [▶].*

◀I: Backward (DVD only)
I▶: Forward (DVD/Video CD only)

③ Play

Press [▼] or [SELECT] to select "▶".

④ Search function

Press [◀] or [▶].*

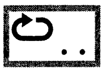
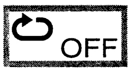
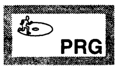
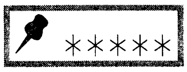
◀◀: Backward
▶▶: Forward

*Each time [◀] or [▶] is pressed, the speed increases in 5 steps.

For your reference

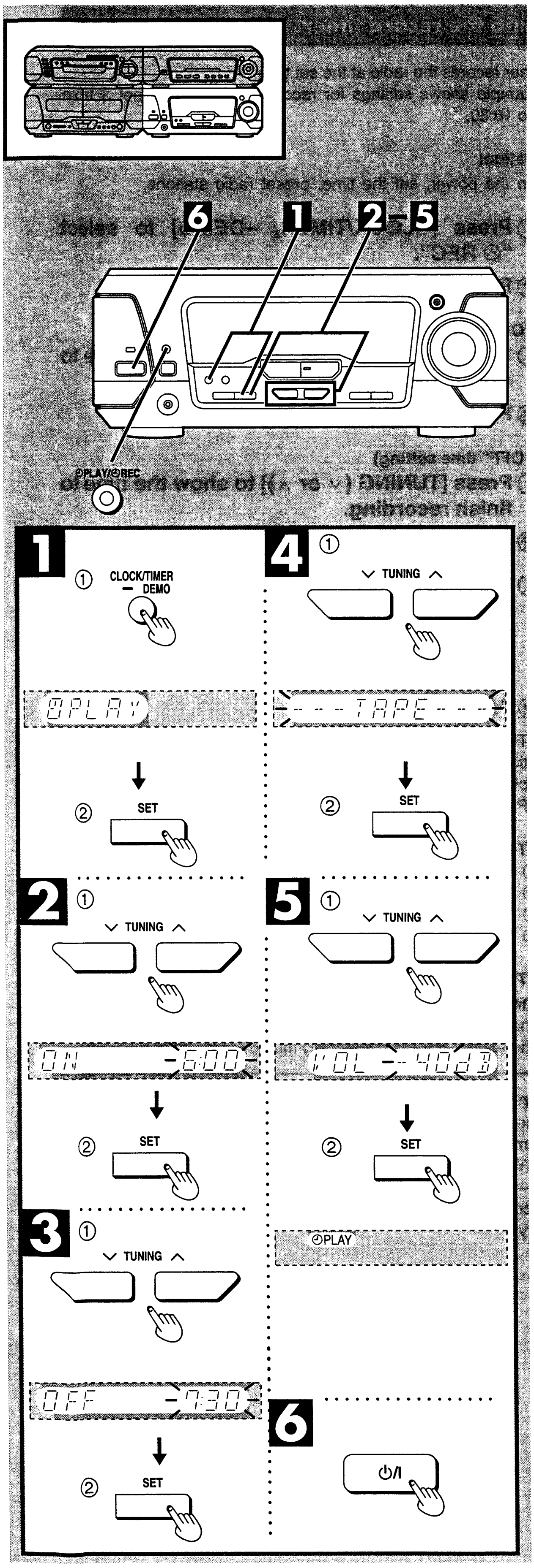
The figures appearing at the both ends of the screen stand for the maximum speeds of search.
(DVD: +100/−100, Video CD: +40/−40, CD: +50/−50)

Screen for changer information

	Remarks	Changing method
B 	To start A-B repeat play	[SELECT] ↓ [SELECT]
C 	To select the repeat play mode • C (chapter repeat), T (title repeat) or OFF (normal play) (DVD) • T (track repeat), A (disc repeat) or OFF (normal play) (Video CD/Audio CD)	[▼] [▲]
D 	To show the current play mode (Video CD/CD only) • "---" (normal play), PRG (program play) or RND (random play)	—
E 	To store a marker	[SELECT]
	To recall a marker	[◀] [▶]→ [▲]
	To clear a marker	[◀] [▶]→ [SHIFT]+ [PLAY MODE]

- [◀] [▶] [▼] [▲]: press the cursor buttons on the remote control.
- This function does not work with interactive DVDs or during menu play of Video CDs.

■ Using the Timer



Using the play timer

This timer starts play of the selected source at the selected time. The example shows settings to play between 6:00 and 7:30 at −40 dB.

Preparation:
Turn on the power, set the time, preset radio stations if you want the timer to start playing the radio.

1 **① Press [CLOCK/TIMER, –DEMO] to select "⊙ PLAY".**

② Press [SET] within 3 seconds.

2 **("ON" time setting)**

① Press [TUNING (∨ or ∧)] to show the time to start playing.

② Press [SET].

3 **("OFF" time setting)**

① Press [TUNING (∨ or ∧)] to show the time to finish playing.

② Press [SET].

4 **① Press [TUNING (∨ or ∧)] to select the desired source.**
The display will change as follows.
DVD⟷TAPE⟷TUNER
↑―――――――――↑

② Press [SET].

When you select "TUNER", select a preset channel using [TUNING (∨ or ∧)], and then press [SET].

5 **① Press [TUNING (∨ or ∧)] to adjust the volume level for the timer play.**

② Press [SET].

- The display will show ON time, OFF time, the source you select, and the volume level alternately, and then reverts to the previous display.
- Please confirm "⊙ PLAY".

6 **Press [⏻/I] to switch the power to standby mode.**
The timer play will start at the preset time with volume increasing gradually up to the volume level you preset.

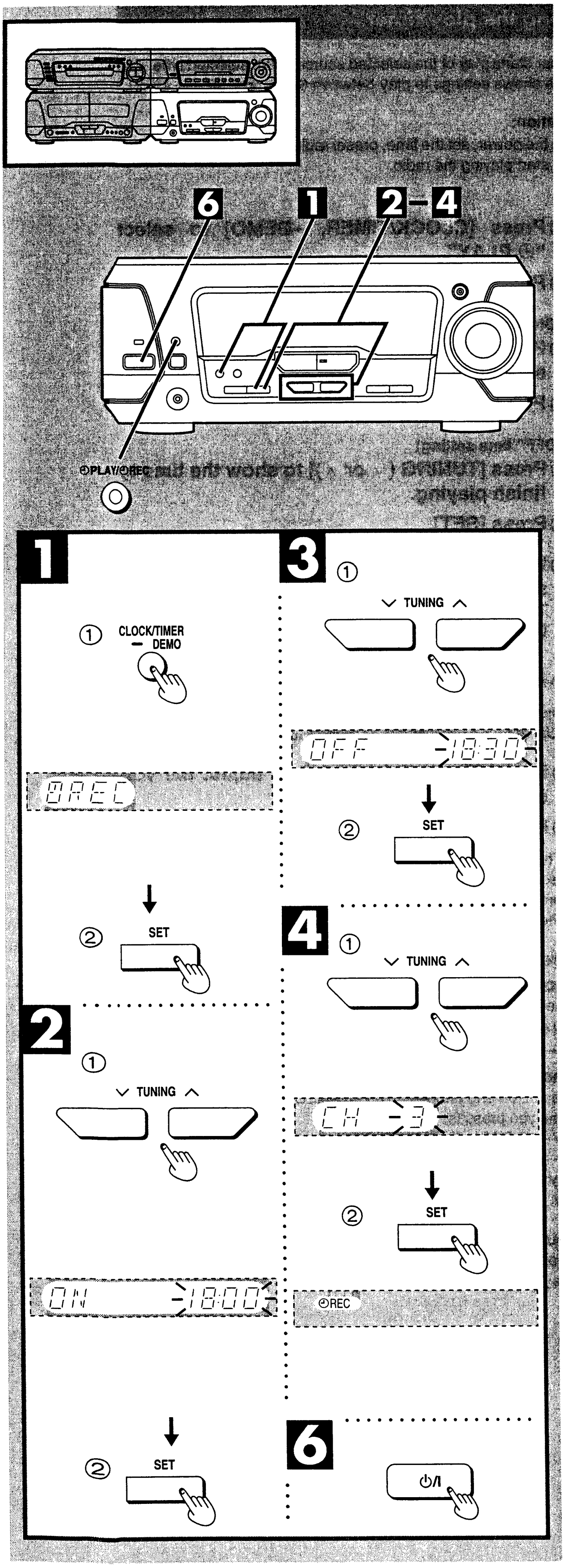
To cancel the timer

Turn the unit on and press [⊙ PLAY/⊙ REC] to turn off "⊙ PLAY".
Each time you press the button,
⊙ PLAY→⊙ REC→⊙ PLAY ⊙ REC→Light off (off)
↑―――――――――――――――――――――↓

The play timer function will be cancelled, but the settings stay in the memory.

For your reference

When you insert cassettes in decks 1 and 2, deck 1 has priority for timer play on tape.



Using the record timer

This timer records the radio at the set time.
The example shows settings for recording preset channel 3 from 18:00 to 18:30.

Preparation:
Turn on the power, set the time, preset radio stations.

1 **① Press [CLOCK/TIMER, –DEMO] to select "⏲ REC".**

② Press [SET] within 3 seconds.

2 **("ON" time setting)**

① Press [TUNING (∨ or ∧)] to show the time to start recording.

② Press [SET].

3 **("OFF" time setting)**

① Press [TUNING (∨ or ∧)] to show the time to finish recording.

② Press [SET].

4 **① Press [TUNING (∨ or ∧)] to select the desired preset channel.**

The display will change as follows.
CH1 ⟷ CH2...CH38 ⟷ CH39
↑_________________________↑

② Press [SET].

- The display will show ON time, OFF time, the broadcast station you select alternately, and then resumes the previous display.
- Please confirm "⏲ REC".

5 **Prepare for recording.**

① Insert a tape into deck 2.
② Select the Dolby NR mode.
③ Select the reverse mode.
④ Select the tape travel direction.

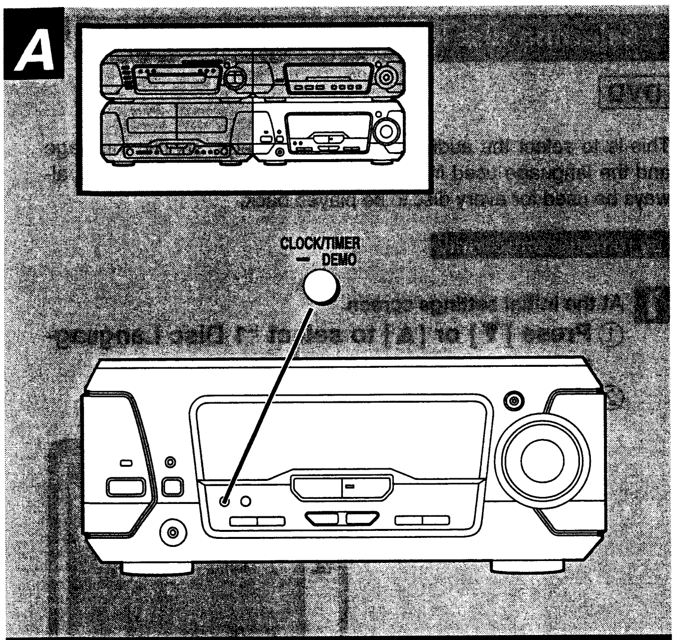
6 **Press [⏻/I] to switch the power to standby mode.**

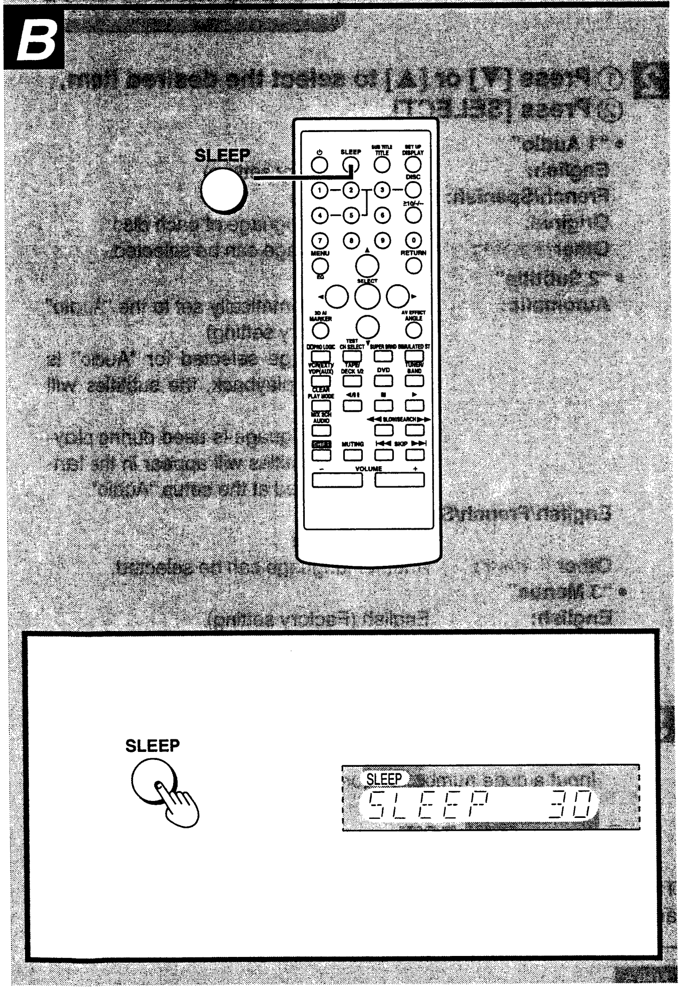
The timer recording will start 30 seconds before the preset time.
The sound will be automatically muted during timer recording.

To cancel the timer

Turn the unit on and press [⏲ PLAY/⏲ REC] to turn off "⏲ REC".
Each time you press the button,
⏲ PLAY→⏲ REC→⏲ PLAY ⏲ REC→Light off (off)
↑____↓

The record timer function will be cancelled, but the settings stay in the memory.





Using play/record timer

A

If you set the timer incorrectly
Repeat the procedure from step **1** on the item of using the play timer or the item of using the record timer.

Checking the timers
Press [CLOCK/TIMER, –DEMO] to select "⊙ PLAY" (or "⊙ REC").
Play timer:
Start time→Finish time→Source→Volume
Record timer:
Start time→Finish time→Station selected

You can check the settings even when the system is OFF.

To enjoy a source after the timer setting is completed
You can enjoy the desired source after the timer setting is completed. The volume level and music source are stored in the timer memory and the timer will start in these preset conditions.

Note

- If the power is on, the timer will not function. The system must be in the standby mode.
- This system retains the ON/OFF time settings until you make a new setting. If you make a new ON time setting, you must make a new OFF time setting.
- The play and record timers function as set until you cancel them. The timers (either one or both) are set when the [⊙ PLAY/⊙ REC] lamp is on.

Using the sleep timer

B

by remote control only

The system will go into power standby mode at the set time (max. 2 hours, half hour intervals), so you can go to sleep listening to music. The example shows how to set the system to standby mode after 30 minutes.

While enjoying the desired source:
Press [SLEEP].
The display will change as follows:
SLEEP 30→SLEEP 60→SLEEP 90
↑ ↓
SLEEP OFF←——— SLEEP120

To cancel the sleep timer
Press [SLEEP] to select "SLEEP OFF".

To confirm the remaining time of the sleep timer
(While sleep timer is functioning)
Press [SLEEP].
The remaining time will be displayed for 5 seconds.

To change the timer setting
(while sleep timer is functioning)
① Press [SLEEP].
The remaining time will be displayed for 5 seconds.
② Press [SLEEP] again to select the desired sleep timer.

Using three timers together

You can use the sleep timer, play timer, and record timer together. Be aware that the sleep timer always has precedence. Ensure the times do not overlap.

■ Initial Settings for DVD/Video CD/CD Changer

Once the initial settings have been completed, the system can always be operated under the same conditions (especially with DVD discs).

The setting screens are slightly different for each area.

Before changing the initial settings

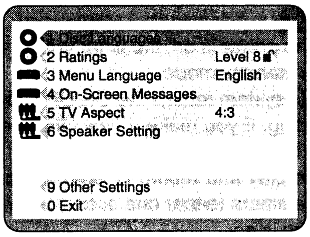
These settings must be done with a disc loaded. If "NO PLAY" appears on this system's display. remove the DVD and insert a CD or video CD.

Common initial settings A

by remote control only

1 Press [SET UP] ([SHIFT]+[DISPLAY]) in the stop mode.

The initial settings screen is displayed.



1 Disc Languages
2 Ratings Level 8
3 Menu Language English
4 On-Screen Messages
5 TV Aspect 4:3
6 Speaker Setting
9 Other Settings
0 Exit

2 ① Press [▼] or [▲] to select the desired item.
② Press [SELECT].

1 Disc Languages
2 Ratings
3 Menu Language
4 On-Screen Messages
5 TV Aspect
6 Speaker Setting
9 Other Settings

3 ① Press [▼] or [▲] to select the desired value.
② Press [SELECT].

Some items require additional steps.

Setting is finished and the initial settings screen is displayed.

To clear the initial setting screen

Press [▼] or [▲] to select "0 Exit" and press [SELECT].
Pressing [SET UP] ([SHIFT]+[DISPLAY]) or [RETURN] also clears the screen.

For your reference

The numeric buttons can also be used for selecting items or values instead of the cursor buttons; in this case, pressing [SELECT] is not necessary.

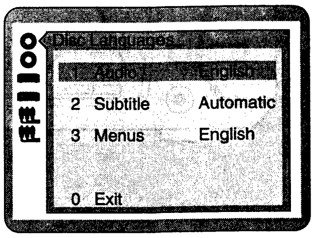
Selecting disc languages B

DVD

This is to select the audio soundtrack language, subtitle language and the language used in title menus or DVD menus which will always be used for every disc to be played back.

by remote control only

1 At the initial settings screen
① Press [▼] or [▲] to select "1 Disc Languages".
② Press [SELECT].



Disc Languages
1 Audio English
2 Subtitle Automatic
3 Menus English
0 Exit

2 ① Press [▼] or [▲] to select the desired item.
② Press [SELECT].

- **"1 Audio"**

English:	English (Factory setting)
French/Spanish:	Each language
Original:	The original language of each disc
Other ∗∗∗∗:	Another language can be selected.

- **"2 Subtitle"**

Automatic:	Subtitle is automatically set to the "Audio" setting. (Factory setting) • If the language selected for "Audio" is used during playback, the subtitles will not appear. • If another language is used during playback, the subtitles will appear in the language selected at the setup "Audio".
English/French/Spanish:	Each language
Other ∗∗∗∗:	Another language can be selected.

- **"3 Menus"**

English:	English (Factory setting)
French/Spanish:	Each language
Other ∗∗∗∗:	Another language can be selected.

3 ① Press [▼] or [▲] to select the desired language.

Input a code number by numeric buttons when you selected "Other ∗∗∗∗".

② Press [SELECT].

The screen in step **1** is displayed. Select "0 Exit" by cursor buttons and press [SELECT] to return to the initial settings screen.

Note

If the language selected is not available on the disc, the language designated by each disc will be selected.

Selecting rating level C

DVD

This is to disable the playing of specified DVDs which are unsuitable for children.

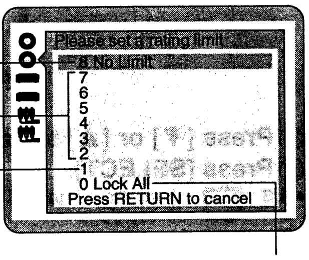
- Some DVDs are encoded with specific rating level. If the rating level of the disc is higher than that preset in the setup operation, playback of the disc will be prohibited.

by remote control only

1 **At the initial settings screen**

① Press [▼] or [▲] to select "2 Ratings".

② Press [SELECT].



Please set a rating limit
8 No Limit
7
6
5
4
3
2
1
0 Lock All
Press RETURN to cancel

All DVDs can be played back. (Factory setting)

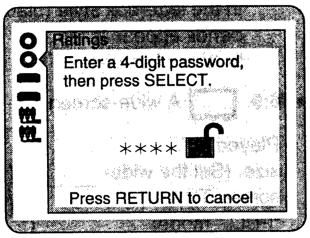
DVDs for general audiences/children can be played back. (DVDs for adults are prohibited.)

DVDs for children can be played back. (DVDs for adults/general audiences are prohibited.)

Playback of all DVDs is prohibited

2 **① Press [▼] or [▲] to select the desired level.**

② Press [SELECT].



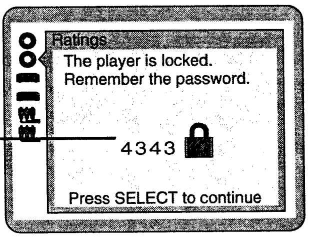
Ratings
Enter a 4-digit password, then press SELECT.
****
Press RETURN to cancel

3 **When level 7 or lower is selected**

① Input a 4-digit number (password) by numeric buttons.

② Press [SELECT].

The lock symbol appears closed to show the rating is locked.



Ratings
The player is locked.
Remember the password.
4343
Press SELECT to continue

Example: "4343"

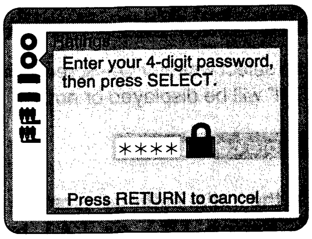
4 **Press [SELECT].**

Setting is finished and the initial settings screen is displayed.

The rating is locked. Any discs whose rating is higher than the setting cannot be played back unless the correct password is entered.

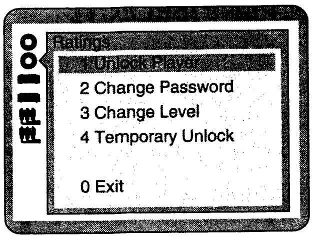
To change the settings

1. Select "2" with the cursor buttons at the initial settings screen and press [SELECT].



Ratings
Enter your 4-digit password, then press SELECT.
****
Press RETURN to cancel

2. Input 4-digit password and press [SELECT].



Ratings
1 Unlock Player
2 Change Password
3 Change Level
4 Temporary Unlock
0 Exit

3. Select the preferred item with the cursor buttons and press [SELECT].
4. **1 Unlock Player**
   Press [SELECT].
   2 Change Password
   Enter a new 4-digit password and press [SELECT].
   Press [SELECT] again.
   3 Change Level
   Select a level and press [SELECT].
   4 Temporary Unlock
   Select to temporarily unlock the player to view the DVD in the play position immediately after changing the ratings. Select before exiting the menu.
   Press [SELECT].
5. Select "0 Exit" and press [SELECT] to exit.

Note

Some discs may not be encoded with specific rating level information though its disc jacket says that it is for "adults".

Selecting menu language D

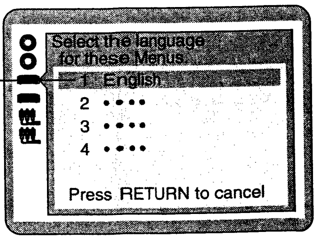
by remote control only

The language of the On-Screen message is changed.

1 **At the initial settings screen**

① Press [▼] or [▲] to select "3 Menu Language".

② Press [SELECT].



Select the language for these Menus.
1 English
2 ••••
3 ••••
4 ••••
Press RETURN to cancel

Factory setting

2 **① Press [▼] or [▲] to select the desired language.**

② Press [SELECT].

Setting is finished and the initial settings screen is displayed.

Setting the On-Screen Messages

E

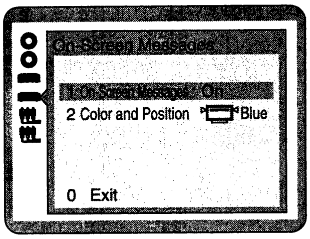
You can select whether On-Screen Display messages such as "Play" and "Still" will be displayed or not.

by remote control only

1 At the initial settings screen

① Press [▼] or [▲] to select "4 On-Screen Messages".

② Press [SELECT].



On-Screen Messages

1 On-Screen Messages On

2 Color and Position Blue

0 Exit

2 ① Press [▼] or [▲] to select the desired item.

② Press [SELECT].

1 **On-Screen Messages**
To select whether "Play", "Still" and others are displayed or not.

2 **Color and Position**
To select the color and position of "Play", "Still" and other as well as GUI screens.

3 ① Press [▼] or [▲] to select desired setting.

② Press [SELECT].

- **"1 On-Screen Messages"**
  1 On: "Play", "Still" and others will always appear on the TV. (Factory setting)
  2 Off: "Play", "Still" and others will not appear on the TV.
- **"2 Color and Position"**
  The colors and positions are set as follows:
  1 Blue/Upper (Factory setting)
  2 Violet/Upper
  3 Green/Upper
  4 Blue/Middle upper
  5 Violet/Middle upper
  6 Green/Middle upper

The screen illustrated in step **1** is displayed. Select "0 Exit" by using cursor buttons and press [SELECT] to return to the initial settings screen.

Selecting TV aspect

F

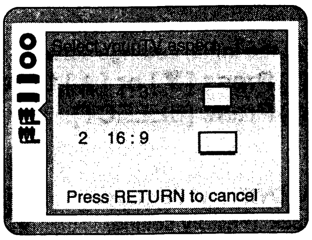
Select the appropriate TV aspect according to your TV set; conventional size screen (4:3) or wide-screen (16:9).

by remote control only

1 At the initial settings screen

① Press [▼] or [▲] to select "5 TV Aspect".

② Press [SELECT].



Select your TV aspect

1 4:3

2 16:9

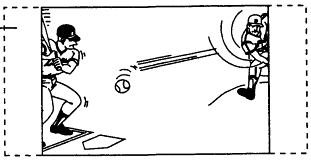
Press RETURN to cancel

2 ① Press [▼] or [▲] to select the desired type.

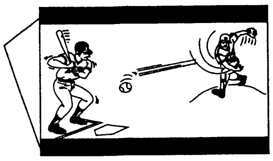
② Press [SELECT].

- **4:3** A conventional TV (factory setting)

Video material formatted in the Pan & Scan style is played back in that style (the left and right edges are cut off).

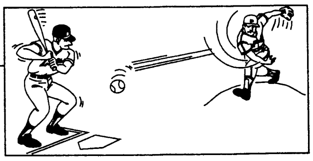


Video material not formatted in the Pan & Scan style is played back in the letterbox style (black bands appear at top and bottom of screen).



- **16:9** A wide-screen TV

Played in "FULL" size. (Set the wide-screen TV to "FULL" mode)



※ Each screen shows an example when the video material for a wide-screen is played. (This setting does not affect the video material for conventional size.)

Setting is finished and the initial settings screen is displayed.

Speaker setting G

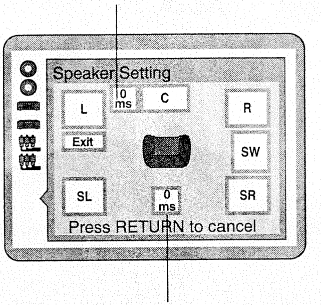
by remote control only

1 At the initial settings screen

① **Press [▼] or [▲] to select "6 Speaker Setting".**

② **Press [SELECT].**

Center delay time



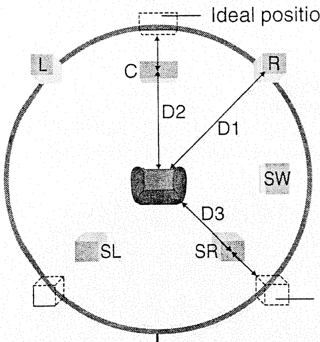
Surround delay time

2 ① **Press [▼] or [▲] to select "Center Delay time" or "Surround Delay time".**

② **Press [SELECT].**

3 ① **Press [▼] or [▲] to select the desired time.**

② **Press [SELECT].**



Ideal position of the center speaker

Ideal position of the surround speakers

It is recommended to locate all the speakers inside of this circle.

If the surround speakers or the center speaker can't be installed at an equal distance to the front speakers from the listening position, change the delay time to get better surround effect.

- When D2 or D3 is equal to or larger than D1, no setting is necessary. Otherwise, change the setting according to the table below.

Speaker	Delay time	Difference between D1 and D2/D3
Center speaker (D2)	1.3 ms 2.6 ms 3.9 ms 5.3 ms	approx. 50cm approx. 100 cm approx. 150 cm approx. 200 cm
Surround speakers (D3)	5.3 ms 10.6 ms 15.9 ms	approx. 200 cm approx. 400 cm approx. 600 cm

To return to the initial setting screen, press [◀] to select "Exit" and press [SELECT].

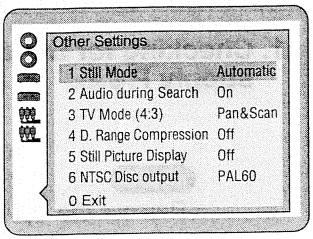
Other settings H

by remote control only

1 At the initial settings screen

① **Press [▼] or [▲] to select "9 Other Settings".**

② **Press [SELECT].**



Other Settings

1 Still Mode	Automatic
2 Audio during Search	On
3 TV Mode (4:3)	Pan&Scan
4 D. Range Compression	Off
5 Still Picture Display	Off
6 NTSC Disc output	PAL60
0 Exit	

2 ① **Press [▼] or [▲] to select the desired item.**

② **Press [SELECT].**

- **"1 Still Mode"**

Automatic:	"Frame still" and "Field still" are automatically selected during the still mode. (Factory setting)
Field:	When jittering occurs in the pictures
Frame:	When small text or fine patterns cannot be seen clearly.

- **"2 Audio during Search"**

On:	You want sound during search. (Factory setting)
Off:	You do not want sound during search. (Except for CD)

- **"3 TV Mode (4:3)"**

Pan & Scan:	The video material for a wide-screen will be played back in the Pan & Scan style on a conventional size TV. (Factory setting) • Video material not formatted in the Pan & Scan style will be played back in the letterbox style.
Letterbox:	The video material for a wide-screen will be played back in the letterbox style on a conventional size TV.

- **"4 D. (Dynamic) Range Compression"**

Off:	Normal audio range (Factory setting)
On:	Dynamic sound even on a low volume. [This only works with Dolby Digital DVDs.]

- **"5 Still Picture Display"**

Off:	The picture type (I/P/B) will not be displayed in the still picture mode. (Factory setting)
On:	The picture type (I/P/B) will be displayed.

- **"NTSC Disk output"**

PAL60:	Phase Alternating Line (Factory setting)
NTSC:	National Television System Committee

3 ① **Press [▼] or [▲] to select the desired setting at each screen.**

② **Press [SELECT].**

The screen in step **1** is displayed. Select "0 Exit" with the cursor buttons and press [SELECT] to return to the initial settings screen.

What is meant by "I/P/B (picture type)"?

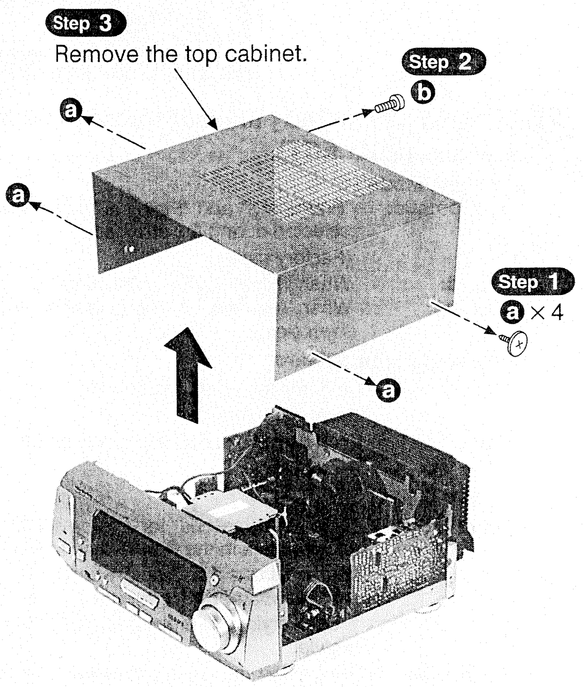
- **I-picture (Intra coded picture)**
  Standard picture type. Each picture is coded separately.
- **P-picture (Predictive coded picture)**
  This is computed on the basis of a past I-picture or P-picture.
- **B-picture (Bidirectionally-predictive coded picture)**
  This is computed by comparing the previous and subsequent I-picture or P-picture.

■ Operation Checks and Component Replacement Procedures

NOTE 1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.

2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

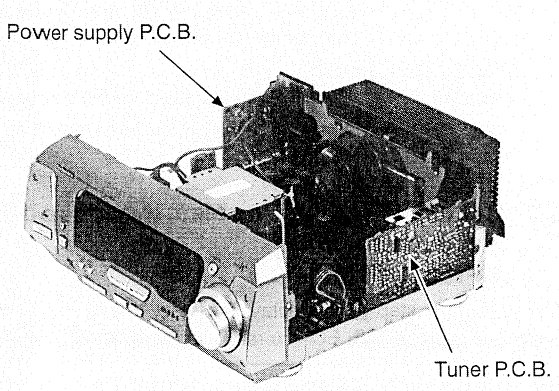
1. Checking for the tuner P.C.B. and power supply P.C.B.


Step 3 Remove the top cabinet.

Step 2 ⓑ

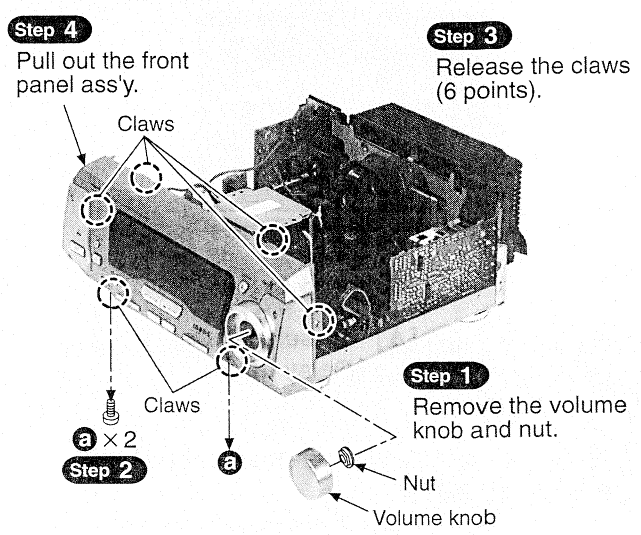
Step 1 ⓐ × 4

- **Check the tuner P.C.B. and power supply P.C.B. as shown below.**



2. Checking for the operation P.C.B.

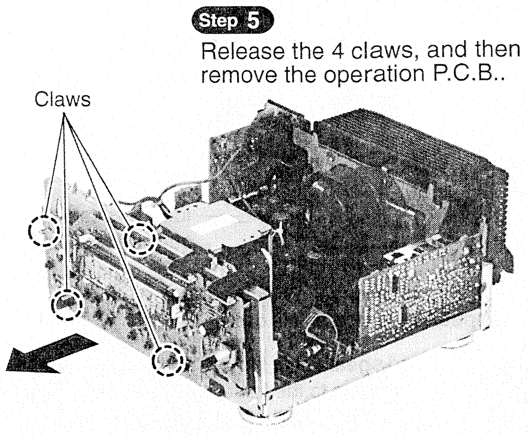
- Follow the **Step 1** ~ **Step 3** of the item 1.


Step 4 Pull out the front panel ass'y.

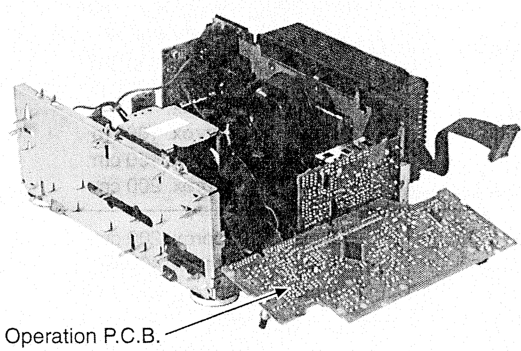
Step 3 Release the claws (6 points).

Step 1 Remove the volume knob and nut.

Step 2 ⓐ × 2

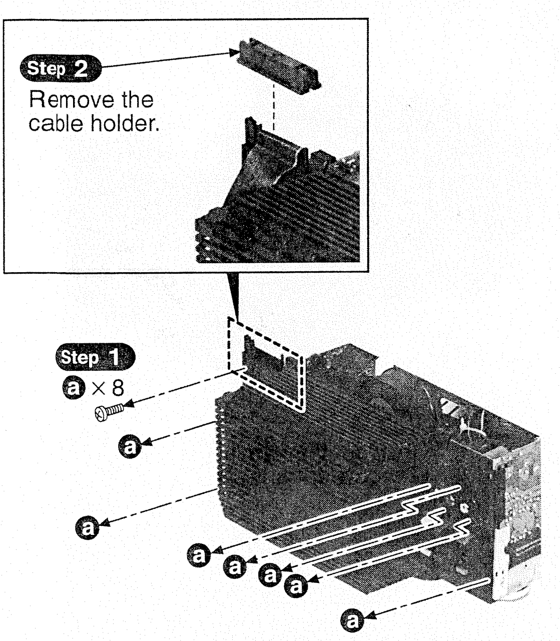

Step 5 Release the 4 claws, and then remove the operation P.C.B..

- **Check the operation P.C.B. as shown below.**



3. Checking for the main P.C.B.

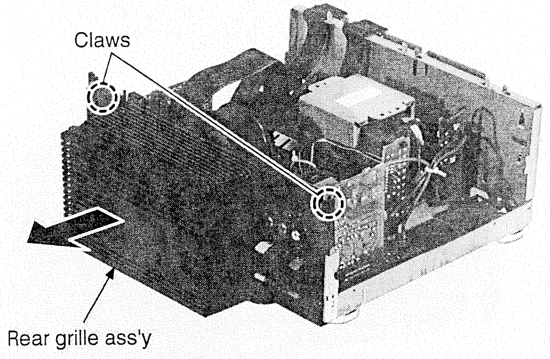
- Follow the **Step 1** ~ **Step 3** of the item 1.
- Follow the **Step 1** ~ **Step 5** of the item 2.

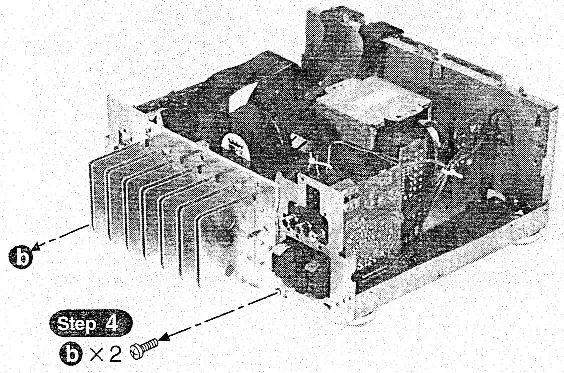


Step 2
Remove the cable holder.

Step 1
ⓐ × 8

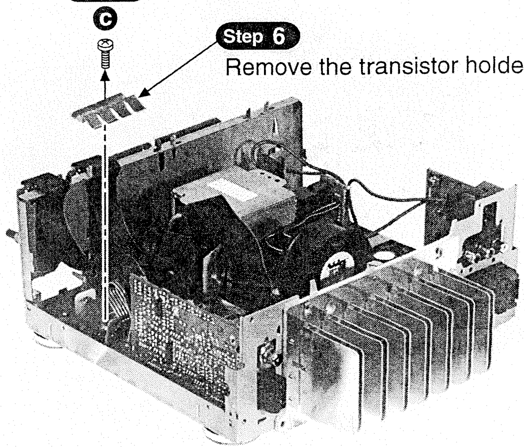
Step 3
Release the 2 claws, and then remove the rear grille ass'y.





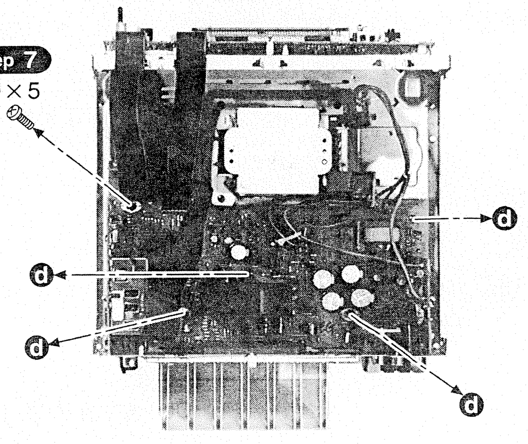
Step 4
ⓑ × 2

Step 5
ⓒ

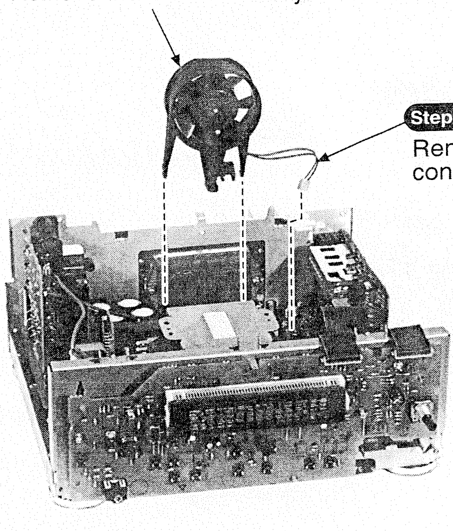


Step 6
Remove the transistor holder.

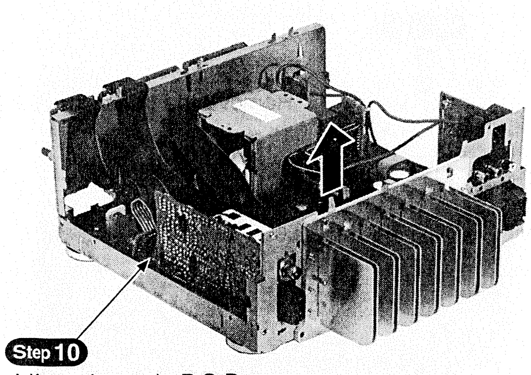
Step 7
ⓓ × 5



Step 9
Remove the fan motor ass'y.

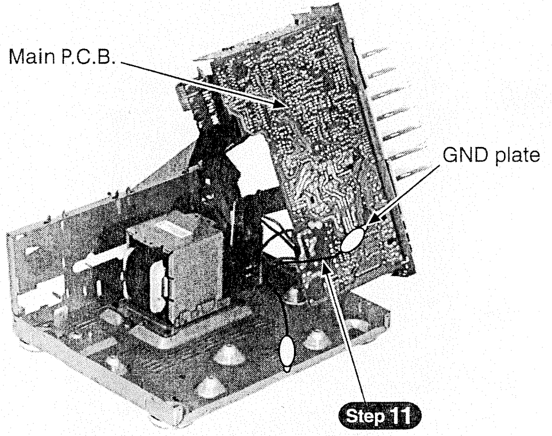


Step 8
Remove the connector.



Step 10
Lift up the main P.C.B..

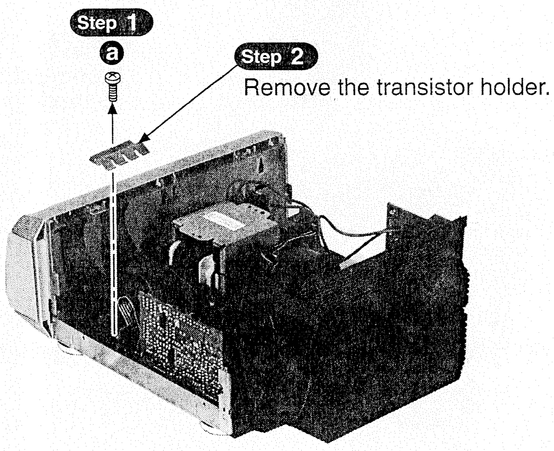
- **Check the main P.C.B. as shown below.**


Main P.C.B.
GND plate

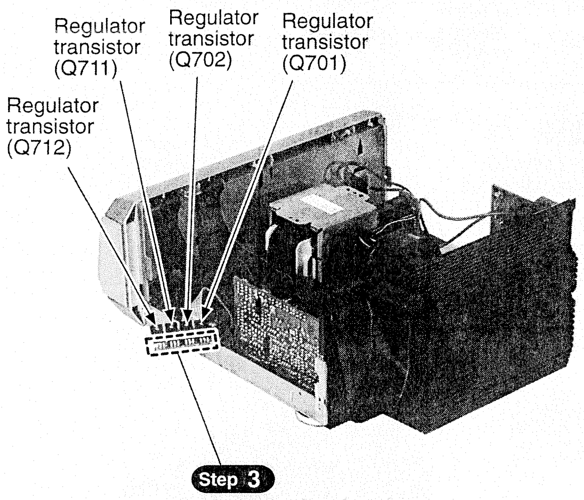
Step 11
Connect the lead wire.

4. Replacement for the regulator transistor

- Follow the **Step 1** ~ **Step 3** of the item 1.



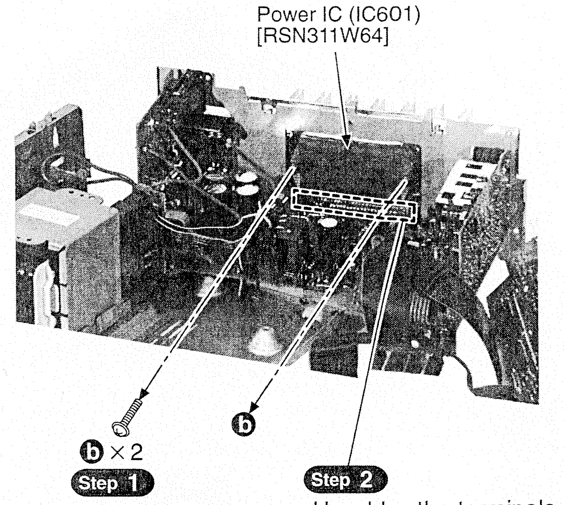
Step 2
Remove the transistor holder.


Regulator transistor (Q711)
Regulator transistor (Q702)
Regulator transistor (Q701)
Regulator transistor (Q712)

Step 3
Unsolder the terminals
of regulator transistor.

5. Replacement for the power IC

- Follow the **Step 1** ~ **Step 3** of the item 1.
- Follow the **Step 1** ~ **Step 5** of the item 2.
- Follow the **Step 1** ~ **Step 10** of the item 3.


Power IC (IC601)
[RSN311W64]
ⓑ × 2
Step 1
ⓑ

Step 2
Unsolder the terminals
of power IC.

NOTE

When mounting the power IC apply silicone conpound (RFKX0002) to the rear side of power IC.

■ To Supply Power Source

This unit SA-DV150 is designed to operate on power supplied from the system connected. (For system connection, refer to Fig.1.)

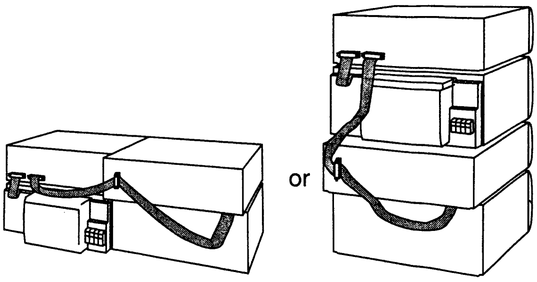


Fig. 1

When the unit SA-DV150 has to test and service alone, use the following method to supply power source.

1. Short the section between **J308** and **J310**. (Refer to Fig. 2.)
2. Connect this unit to an AC power supply cord.
   (This unit come to stand-by mode.)
3. Turn the unit ON.

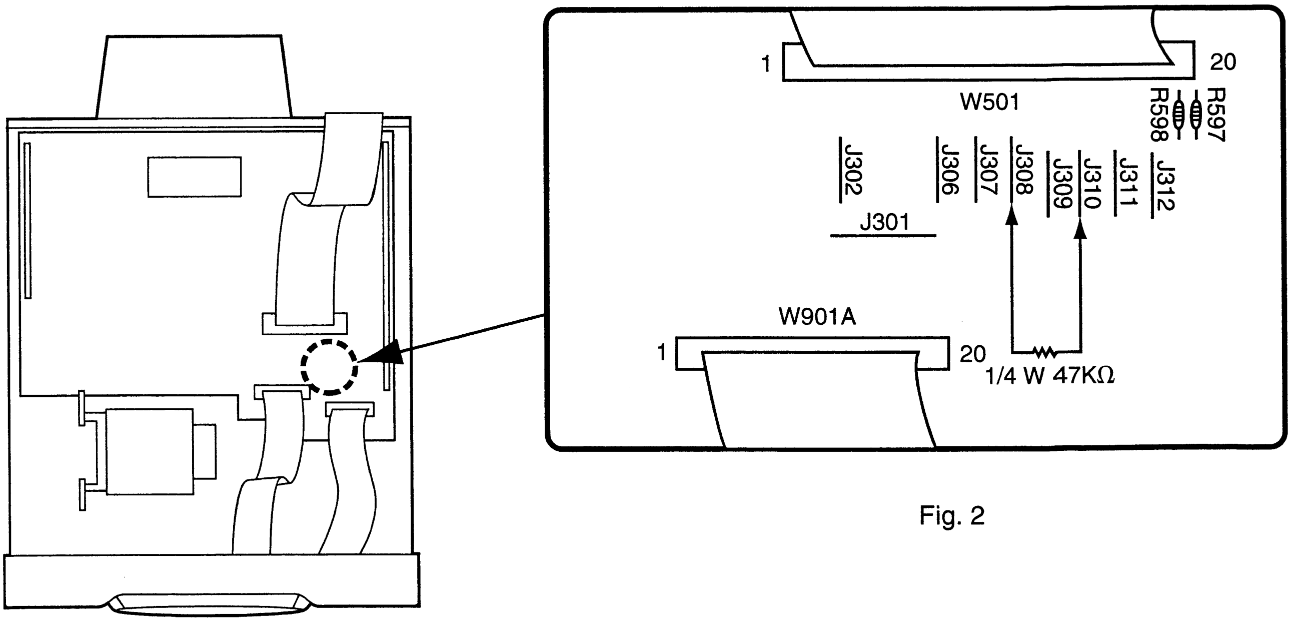

1
20
W501
R597
R598
J302
J306
J307
J308
J309
J310
J311
J312
J301
W901A
1
20
1/4 W 47KΩ

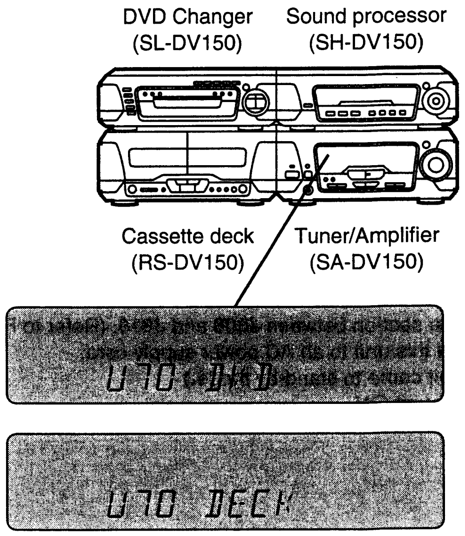
Fig. 2

Notes:

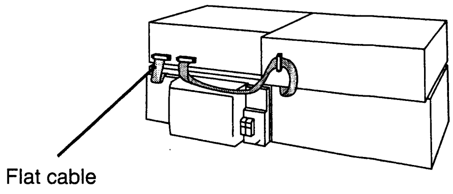
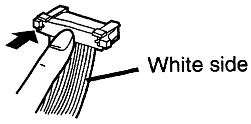
Use only this method when checking the voltage etc..
In case of checking operations, use the system connections to supply power source.

■ Self-Diagnostic Mode

This unit is equipped with a self-diagnostic function which, in the event of a malfunction, automatically displays a code indicating the nature of the malfunction. Use this self-diagnostic function when servicing the unit.

Display method	Display location
To display the malfunction code U70 DVD: U70 DECK: ...... Automatically displays on the tuner/amplifier when a malfunction occurs. F61: .... Automatically displays on the tuner/amplifier when a malfunction occurs. **To return to the normal display** **1. For U70 DVD/U70 DECK:** ● Press some operation buttons on the tuner/amplifier. ● To re-display the code, switch the power (POWER STANDBY button) off, and then switch the power back again. **2. For F61:** ● If "F61" is displayed, the power will automatically be switched off and the standby indicator will light up. ● "F61" will be displayed for 3 seconds, and then the clock will be displayed. ● To re-display the code, switch the power on. "F61" will be re-displayed, and then after 3 seconds the clock will be displayed and the power will automatically switch off.	 DVD Changer (SL-DV150) Sound processor (SH-DV150) Cassette deck (RS-DV150) Tuner/Amplifier (SA-DV150) U70 DVD U70 DECK

Display contents

Display code	Problem or condition	Correction procedure
U70 DVD **U70 DECK** (displayed automatically)	A bus-line communications error has occurred as a result of the flat cables being inserted incorrectly, thus preventing the system from operating. 1.If "U70" is displayed on the tuner/amplifier, the tape deck or DVD Changer cannot be operated by remote control.	 1. To check for correct insertion of the flat cables. ① Insert each connector until you hear a click. ② Insert the flat cables at the back of the unit in the order indicated. Make sure the white side of the cable is on your right side.  2. Breakage of flat cable. (Check and replace as necessary.) 3. If the problem is not corrected by items (1.) and (2.) above, this indicates a faulty IC. **SA-DV150:** IC901 (LC8A524A5M07) **SL-DV150:** IC401 (M38504M6201F) **RS-DV150:** IC701 (M38503M2406F) Check these IC's and replace as necessary.
F61	When the power switch is switched on, it automatically switches back off, making it impossible to switch power on.	● Faulty Tuner/Amplifier (SA-DV150) output IC (IC601). (When a DC voltage is applied to the speaker terminals.)

■ Schematic Diagram

Page

A TUNER CIRCUIT 28,29

B OPERATION CIRCUIT .... 30~32

C MAIN CIRCUIT .... 33~36

D POWER SUPPLY CIRCUIT 35

Page

E SPEAKER TERMINAL CIRCUIT 36

F POWER TRANSFORMER (A) CIRCUIT 36

G POWER TRANSFORMER (B) CIRCUIT 36

- **This schematic diagram may be modified at any time with the development of new technology.**

Notes:

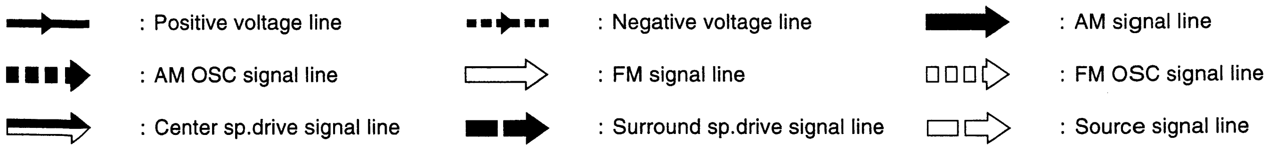
- **S901** : Power "Standby/on" switch (⏻/ I)
- **S902** : ECO mode switch (ECO)
- **S903** : Clock/timer, demo switch (CLOCK/TIMER, ▬ DEMO)
- **S904** : Play timer/Record timer switch (⊕ PLAY/⊕ REC)
- **S905** : FM mode select switch (FM AUTO/MONO)
- **S906** : Tuning mode select switch (TUNING MODE)
- **S907** : Set switch (SET)
- **S908** : Source input select switch (INPUT SELECTOR)
- **S910** : Tuning down switch (TUNING,∨)
- **S911** : Tuning up switch (TUNING,∧)
- **S912** : Tuner/band select switch (TUNER/BAND)
- **S913** : Super woofer switch (S.WOOFER)
- **S914** : RDS PS display mode select switch (RDS DISP MODE–PS)
- **S915** : RDS PTY display mode select switch (RDS DISP MODE–PTY)
- **VR901** : Volume control VR (VOLUME)

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  No mark : FM ( ) : AM

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- **Caution!**
  IC and LSI are sensitive to static electricity.
  Secondary trouble can be prevented by taking care during repair.
  Cover the parts boxes made of plastics with aluminum foil.
  Ground the soldering iron.
  Put a conductive mat on the work table.
  Do not touch the legs of IC or LSI with the fingers directly.

- **Voltage and signal line**



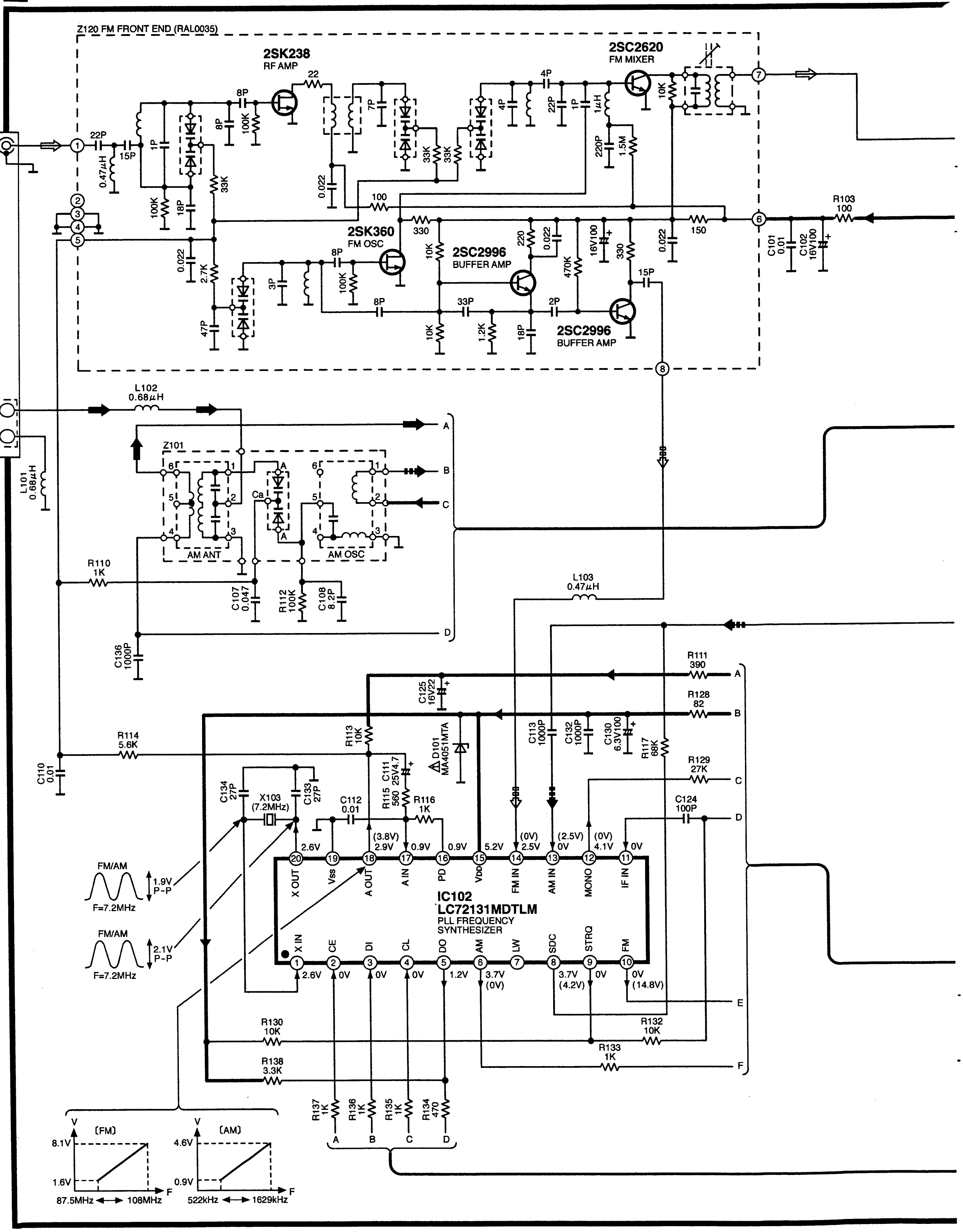
: Positive voltage line
: Negative voltage line
: AM signal line
: AM OSC signal line
: FM signal line
: FM OSC signal line
: Center sp.drive signal line
: Surround sp.drive signal line
: Source signal line

SCHEMATIC DIAGRAM-1

Note: The number which noted at the connectors on the schematic diagram as "SCHEMATIC DIAGRAM-1" or "SCHEMATIC DIAGRAM-2" indicates the schematic diagram serial number located on the left corner in the schematic diagram.

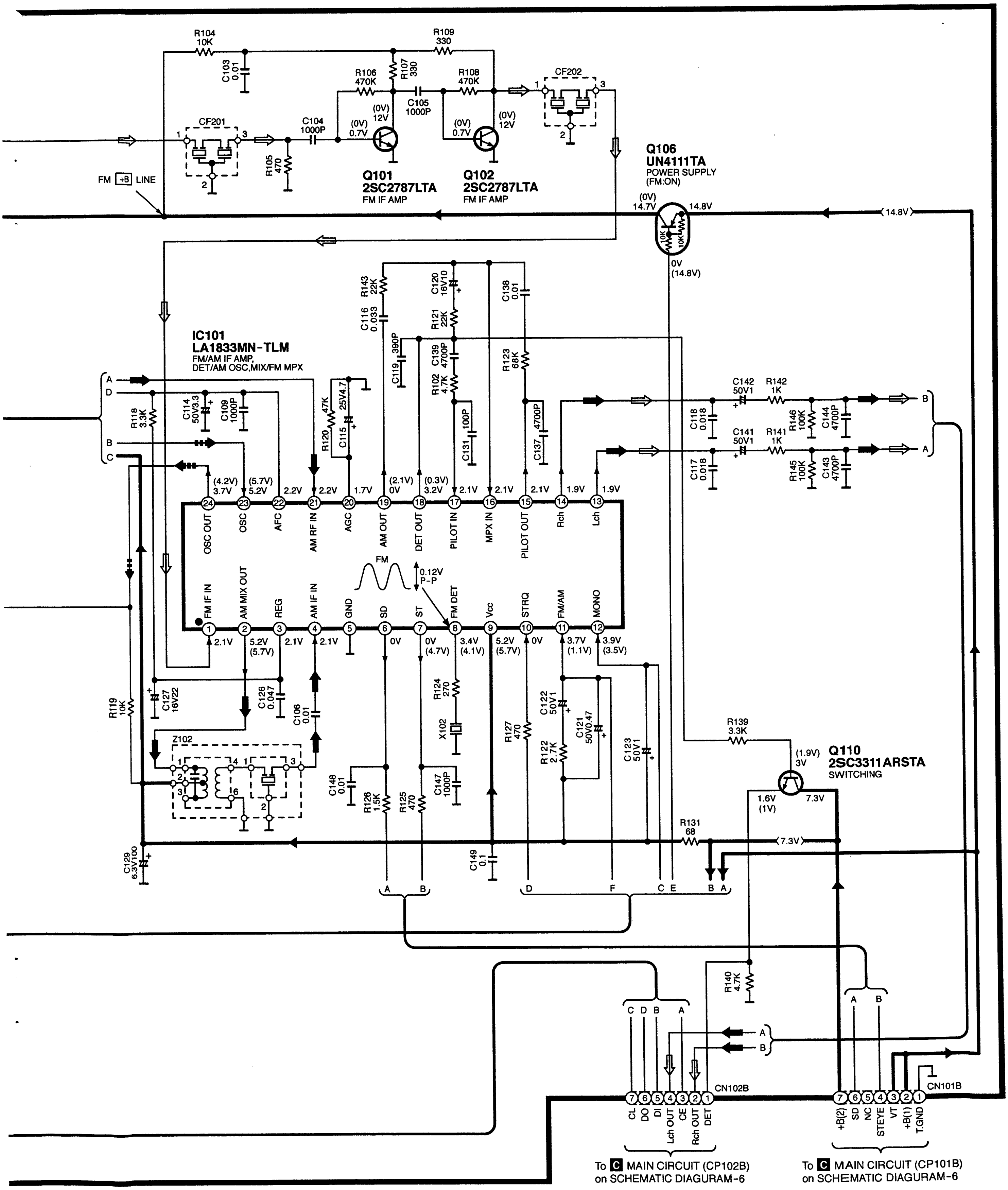
⇨ :FM SIGNAL LINE
➡ :AM SIGNAL LINE
—▶— :POSITIVE VOLTAGE LINE
⇨ :FM OSC SIGNAL LINE
➡ :AM OSC SIGNAL LINE

A TUNER CIRCUIT


Z120 FM FRONT END (RAL0035)
2SK238
RF AMP
2SC2620
FM MIXER
2SK360
FM OSC
2SC2996
BUFFER AMP
2SC2996
BUFFER AMP
JK101
FM ANT
(75Ω)
AM ANT
EXT
LOOP
L102
0.68μH
L101
0.68μH
Z101
AM ANT
AM OSC
Ca
R110
1K
C107
0.047
R112
100K
C108
8.2P
C136
1000P
R103
100
C101
0.01
C102
16V100
L103
0.47μH
R111
390
R128
82
R129
27K
C124
100P
C125
16V22
R113
10K
D101
MA4051MTA
C113
1000P
C132
1000P
C130
6.3V100
R117
68K
R114
5.6K
C110
0.01
C134
27P
X103
(7.2MHz)
C133
27P
C112
0.01
R115
560
C111
25V4.7
R116
1K
IC102
LC72131MDTLM
PLL FREQUENCY
SYNTHESIZER
X OUT
Vss
A OUT
A IN
PD
VDD
FM IN
AM IN
MONO
IF IN
X IN
CE
DI
CL
DO
AM
LW
SDC
STRQ
FM
FM/AM
1.9V
P-P
F=7.2MHz
FM/AM
2.1V
P-P
F=7.2MHz
R130
10K
R138
3.3K
R132
10K
R133
1K
R137
1K
R136
1K
R135
1K
R134
470
(FM)
8.1V
1.6V
87.5MHz
108MHz
(AM)
4.6V
0.9V
522kHz
1629kHz
V
F
A
B
C
D
E
F

SCHEMATIC DIAGRAM-2

→ :POSITIVE VOLTAGE LINE ⇨ :FM SIGNAL LINE ➡ :AM SIGNAL LINE ▮▮➡ :AM OSC SIGNAL LINE


R104 10K
C103 0.01
R109 330
R106 470K
R107 330
R108 470K
C105 1000P
CF202
CF201
C104 1000P
R105 470
Q101 2SC2787LTA FM IF AMP
Q102 2SC2787LTA FM IF AMP
FM +B LINE
Q106 UN4111TA POWER SUPPLY (FM:ON)
(0V) 14.7V
14.8V
0V (14.8V)
IC101 LA1833MN-TLM FM/AM IF AMP, DET/AM OSC,MIX/FM MPX
R143 22K
C116 0.033
C120 16V10
R121 22K
C138 0.01
C119 390P
C139 4700P
R102 4.7K
R123 68K
C131 100P
C137 4700P
R118 3.3K
C114 50V3.3
C109 1000P
R120 47K
C115 25V4.7
C142 50V1
R142 1K
R146 100K
C144 4700P
C118 0.018
C141 50V1
R141 1K
R145 100K
C143 4700P
C117 0.018
OSC OUT
OSC
AFC
AM RF IN
AGC
AM OUT
DET OUT
PILOT IN
MPX IN
PILOT OUT
Rch
Lch
FM IF IN
AM MIX OUT
REG
AM IF IN
GND
SD
ST
FM DET
Vcc
STRQ
FM/AM
MONO
FM 0.12V P-P
R119 10K
C127 16V22
C126 0.047
C106 0.01
Z102
R124 270
X102
R127 470
C122 50V1
C121 50V0.47
R122 2.7K
C123 50V1
R139 3.3K
Q110 2SC3311ARSTA SWITCHING
C148 0.01
R128 1.5K
R125 470
C147 1000P
C149 0.1
C129 6.3V100
R131 68
R140 4.7K
CN102B
CL DO DI Lch OUT CE Rch OUT DET
CN101B
+B(2) SD NC STEYE VT +B(1) T.GND

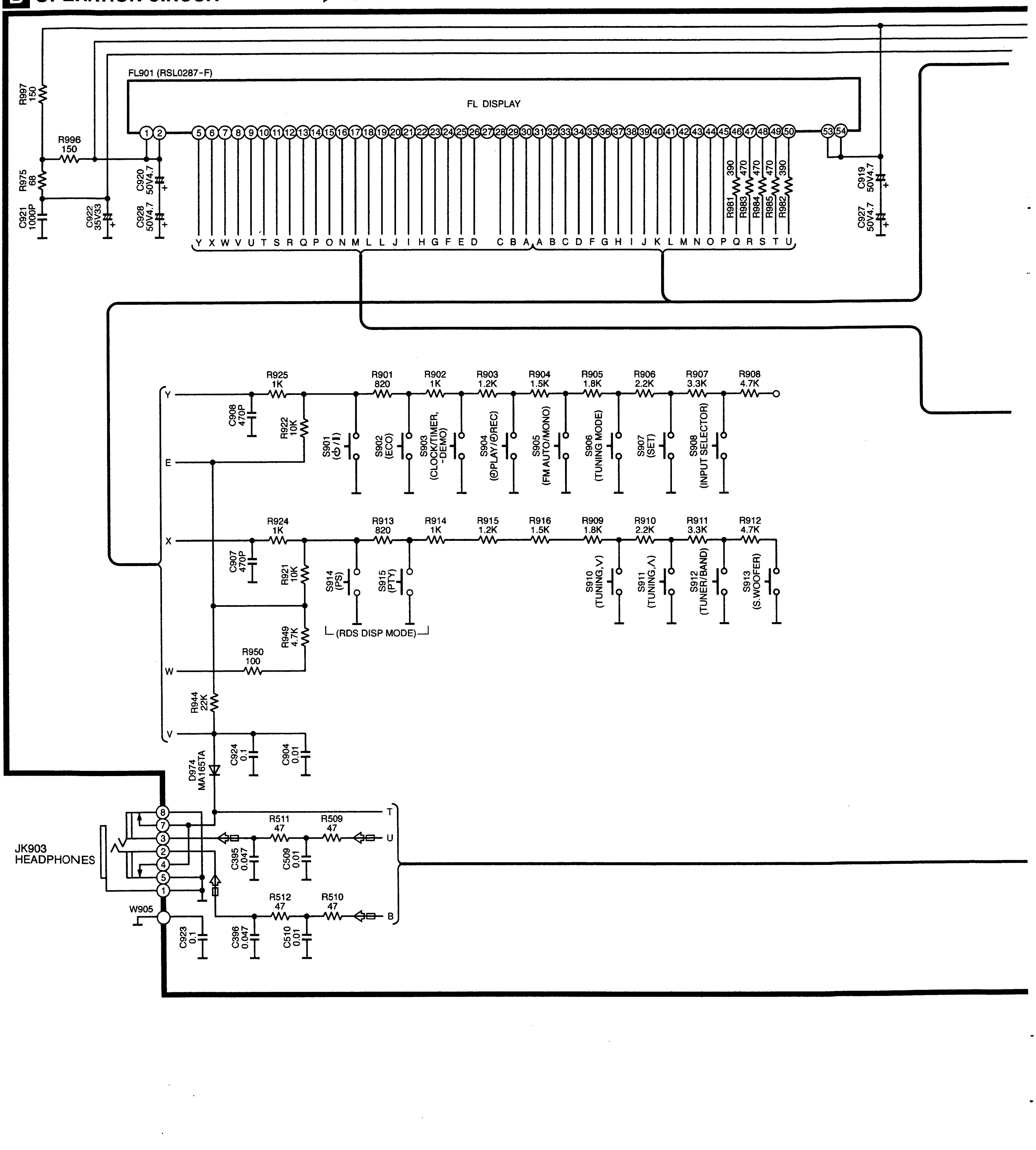
To C MAIN CIRCUIT (CP102B) on SCHEMATIC DIAGURAM-6

To C MAIN CIRCUIT (CP101B) on SCHEMATIC DIAGURAM-6

SCHEMATIC DIAGRAM-3

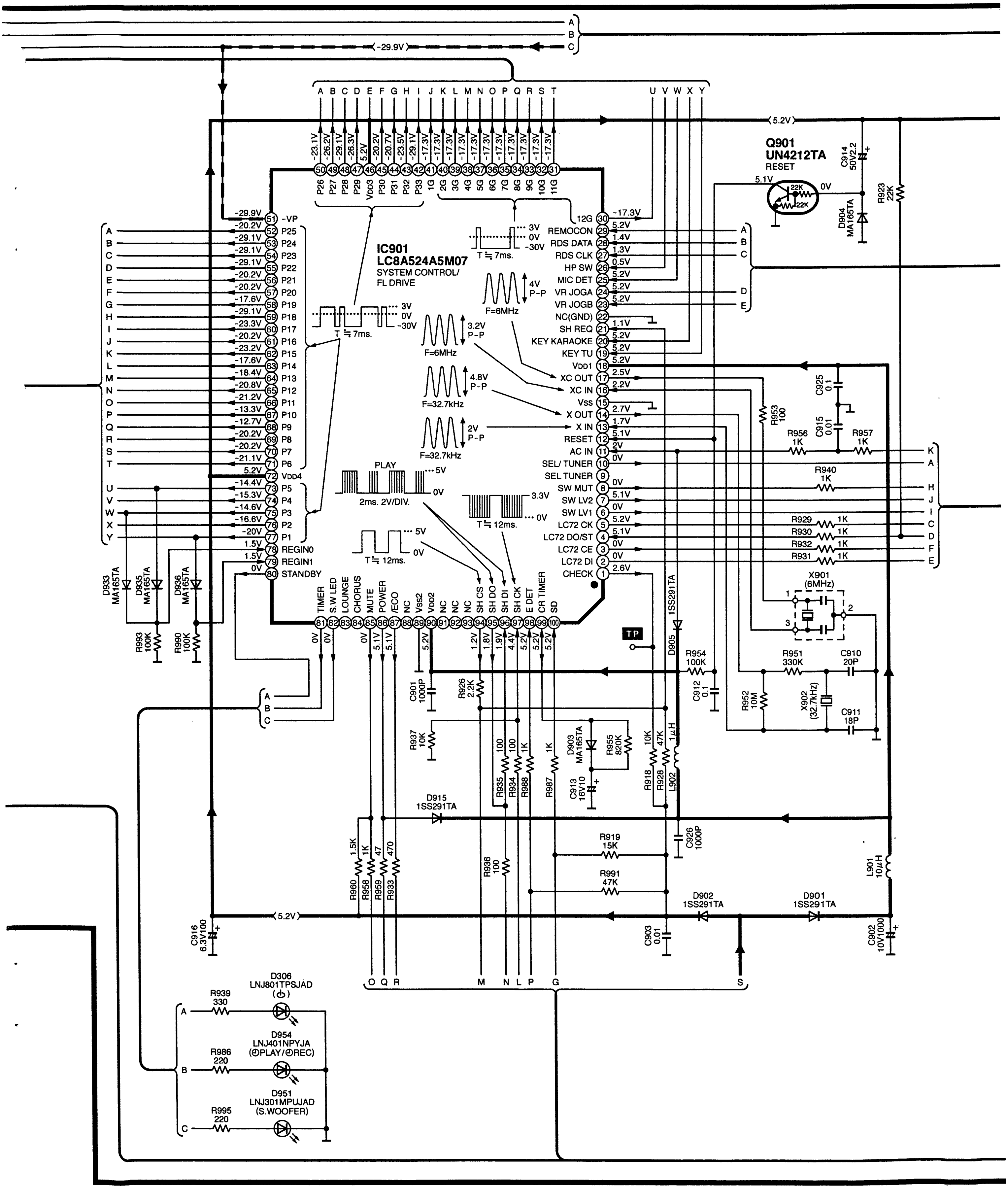
B OPERATION CIRCUIT

: SOURCE SIGNAL LINE


FL901 (RSL0287-F)
FL DISPLAY
R997 150
R996 150
R975 68
C921 1000P
C922 35V33
C920 50V4.7
C928 50V4.7
C919 50V4.7
C927 50V4.7
R981 390
R983 470
R984 470
R985 470
R982 390
Y X W V U T S R Q P O N M L L J I H G F E D C B A A B C D F G H I J K L M N O P Q R S T U
R925 1K
R901 820
R902 1K
R903 1.2K
R904 1.5K
R905 1.8K
R906 2.2K
R907 3.3K
R908 4.7K
C908 470P
R922 10K
S901 (⏻/I)
S902 (ECO)
S903 (CLOCK/TIMER, -DEMO)
S904 (⊖PLAY/⊖REC)
S905 (FM AUTO/MONO)
S906 (TUNING MODE)
S907 (SET)
S908 (INPUT SELECTOR)
Y
E
X
W
V
R924 1K
R913 820
R914 1K
R915 1.2K
R916 1.5K
R909 1.8K
R910 2.2K
R911 3.3K
R912 4.7K
C907 470P
R921 10K
S914 (PS)
S915 (PTY)
(RDS DISP MODE)
S910 (TUNING,V)
S911 (TUNING,Λ)
S912 (TUNER/BAND)
S913 (S.WOOFER)
R949 4.7K
R950 100
R944 22K
C924 0.1
C904 0.01
D974 MA165TA
JK903 HEADPHONES
W905
R511 47
R509 47
R512 47
R510 47
C395 0.047
C509 0.01
C396 0.047
C510 0.01
C923 0.1
T
U
B

SCHEMATIC DIAGRAM-4

: POSITIVE VOLTAGE LINE
: NEGATIVE VOLTAGE LINE


IC901
LC8A524A5M07
SYSTEM CONTROL/
FL DRIVE
Q901
UN4212TA
RESET
-29.9V
5.2V
-VP
P25
P24
P23
P22
P21
P20
P19
P18
P17
P16
P15
P14
P13
P12
P11
P10
P9
P8
P7
P6
VDD4
P5
P4
P3
P2
P1
REGIN0
REGIN1
STANDBY
P26
P27
P28
P29
VDD3
P30
P31
P32
P33
1G
2G
3G
4G
5G
6G
7G
8G
9G
10G
11G
12G
REMOCON
RDS DATA
RDS CLK
HP SW
MIC DET
VR JOGA
VR JOGB
NC(GND)
SH REQ
KEY KARAOKE
KEY TU
VDD1
XC OUT
XC IN
Vss
X OUT
X IN
RESET
AC IN
SEL/ TUNER
SEL TUNER
SW MUT
SW LV2
SW LV1
LC72 CK
LC72 DO/ST
LC72 CE
LC72 DI
CHECK
TIMER
S.W LED
LOUNGE
CHORUS
MUTE
POWER
/ECO
NC
Vss2
VDD2
NC
NC
NC
SH CS
SH DO
SH DI
SH CK
E DET
CR TIMER
SD
T ≒ 7ms.
F=6MHz
F=32.7kHz
PLAY
2ms. 2V/DIV.
T ≒ 12ms.
X901 (6MHz)
X902 (32.7kHz)
D933 MA165TA
D935 MA165TA
D936 MA165TA
D904 MA165TA
D903 MA165TA
D905 1SS291TA
D915 1SS291TA
D902 1SS291TA
D901 1SS291TA
R993 100K
R990 100K
R923 22K
C914 50V2.2
C925 0.1
C915 0.01
R953 100
R956 1K
R957 1K
R940 1K
R929 1K
R930 1K
R932 1K
R931 1K
R954 100K
C912 0.1
R951 330K
C910 20P
R952 10M
C911 18P
C901 1000P
R926 2.2K
R937 10K
R935 100
R934 100
R988 1K
R987 1K
C913 16V10
R955 820K
R918 10K
R928 47K
L902 1μH
C926 1000P
R919 15K
R991 47K
R960 1.5K
R958 1K
R959 47
R933 470
R936 100
L901 10μH
C916 6.3V100
C903 0.01
C902 10V1000
TP
D306 LNJ801TPSJAD
R939 330
D954 LNJ401NPYJA (PLAY/REC)
R986 220
D951 LNJ301MPUJAD (S.WOOFER)
R995 220

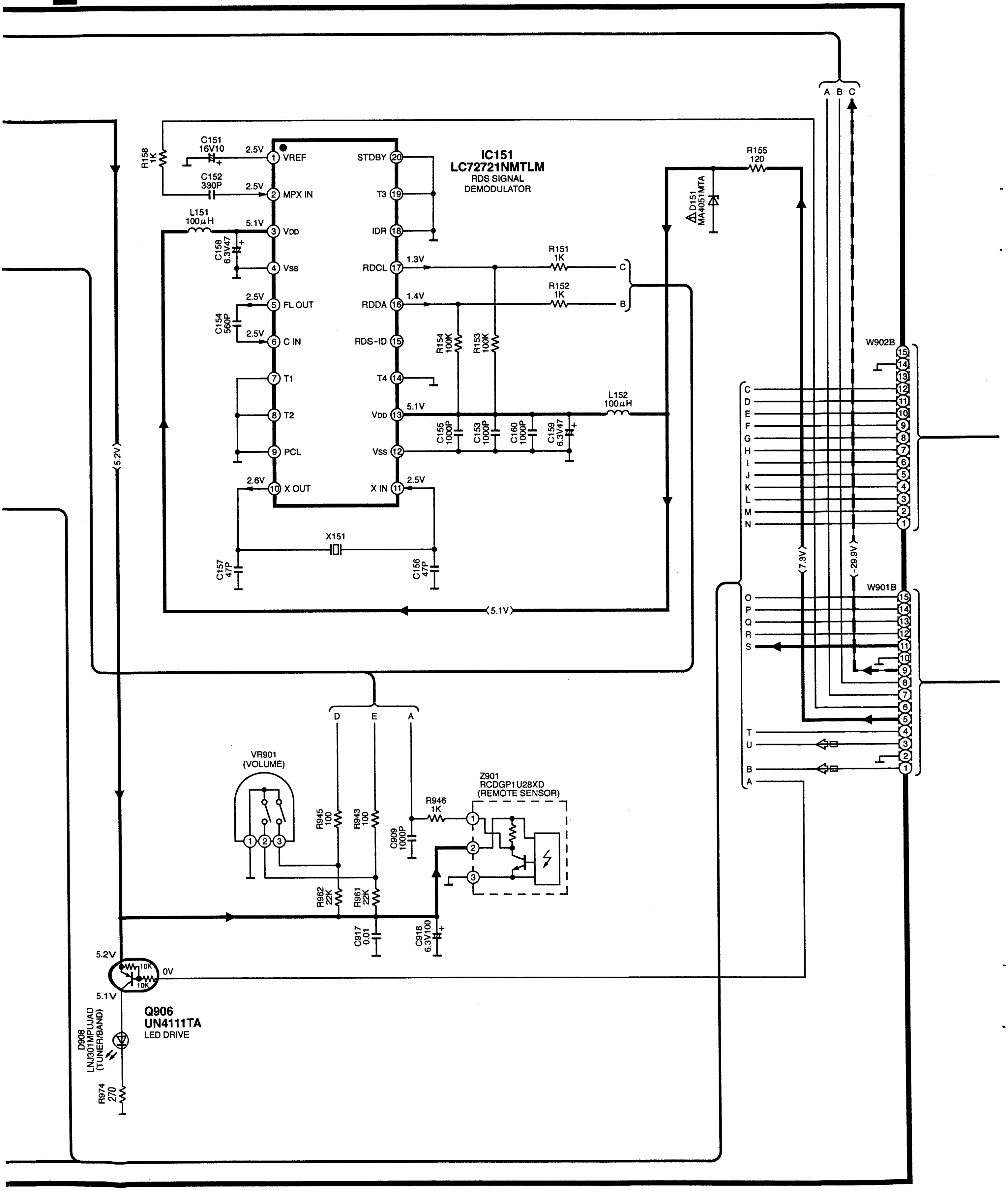
SCHEMATIC DIAGRAM-5

B OPERATION CIRCUIT

—▶— : POSITIVE VOLTAGE LINE

– ▶ – : NEGATIVE VOLTAGE LINE

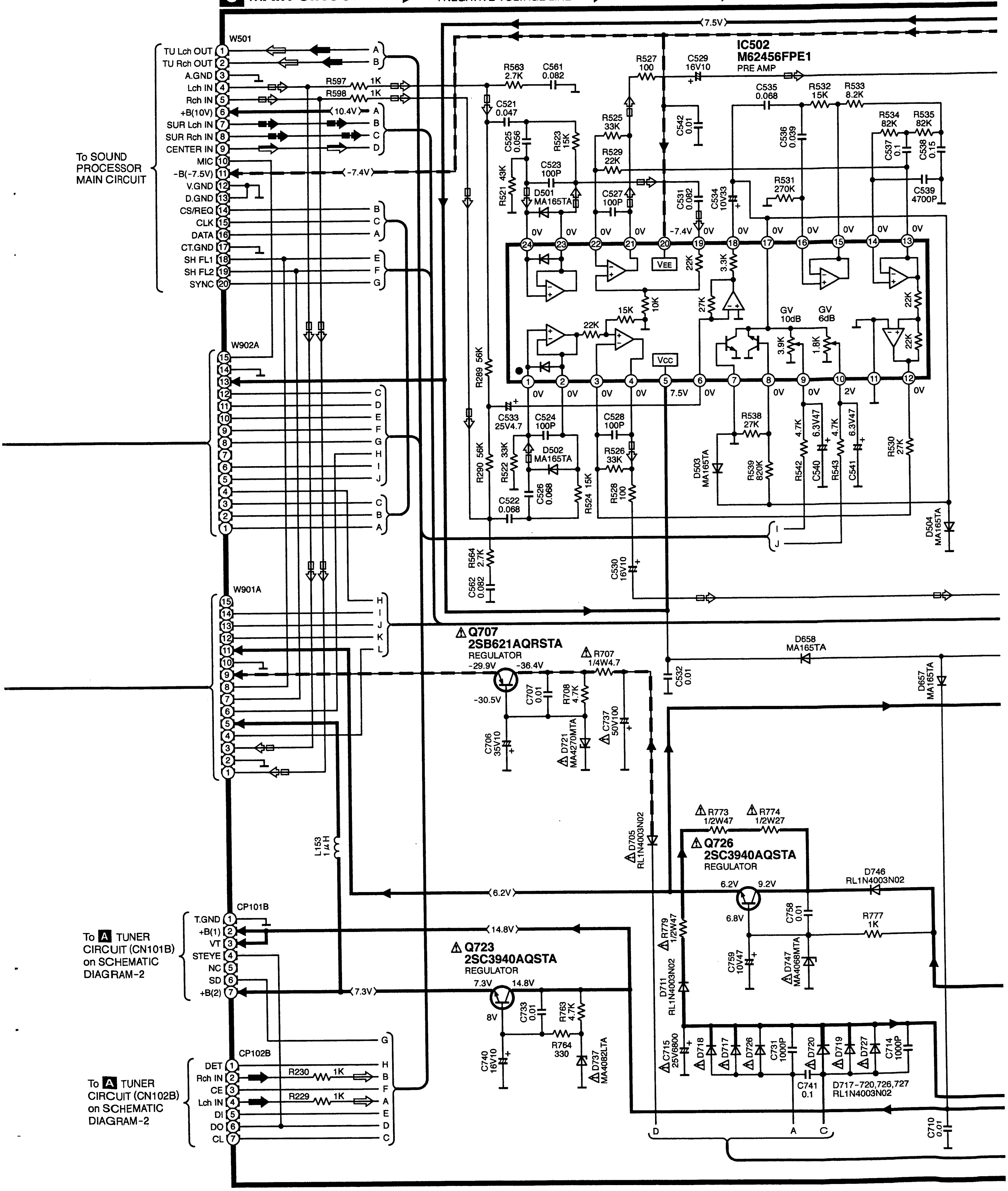
□▷ : SOURCE SIGNAL LINE


IC151
LC72721NMTLM
RDS SIGNAL
DEMODULATOR
1 VREF
2 MPX IN
3 VDD
4 VSS
5 FL OUT
6 C IN
7 T1
8 T2
9 PCL
10 X OUT
11 X IN
12 VSS
13 VDD
14 T4
15 RDS-ID
16 RDDA
17 RDCL
18 IDR
19 T3
20 STDBY
R158 1K
C151 16V10
C152 330P
L151 100μH
C158 6.3V47
C154 560P
C157 47P
C156 47P
X151
2.5V
2.5V
5.1V
2.5V
2.5V
2.6V
2.5V
1.3V
1.4V
5.1V
R151 1K
R152 1K
R154 100K
R153 100K
C155 1000P
C153 1000P
C160 1000P
C159 6.3V47
L152 100μH
R155 120
D151 MA4051MTA
(5.1V)
(5.2V)
(7.3V)
(-29.9V)
A B C
C
B
W902B
C D E F G H I J K L M N
W901B
O P Q R S T U B A
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
D E A
VR901 (VOLUME)
R945 100
R943 100
R962 22K
R961 22K
C917 0.01
C909 1000P
C918 6.3V100
R946 1K
Z901
RCDGP1U28XD
(REMOTE SENSOR)
5.2V
5.1V
0V
10K
10K
Q906
UN4111TA
LED DRIVE
D908
LNJ301MPUJAD
(TUNER/BAND)
R974 270

SCHEMATIC DIAGRAM-6

C MAIN CIRCUIT

: POSITIVE VOLTAGE LINE
: NEGATIVE VOLTAGE LINE
: FM SIGNAL LINE
: AM SIGNAL LINE
: SOURCE SIGNAL LINE
: SURROUND SP.DRIVE SIGNAL LINE
: CENTER SP.DRIVE SIGNAL LINE



W501
TU Lch OUT 1
TU Rch OUT 2
A.GND 3
Lch IN 4
Rch IN 5
+B(10V) 6
SUR Lch IN 7
SUR Rch IN 8
CENTER IN 9
MIC 10
-B(-7.5V) 11
V.GND 12
D.GND 13
CS/REQ 14
CLK 15
DATA 16
CT.GND 17
SH FL1 18
SH FL2 19
SYNC 20
To SOUND PROCESSOR MAIN CIRCUIT
R597 1K
R598 1K
(10.4V)
(-7.4V)
(7.5V)
IC502
M62456FPE1
PRE AMP
R563 2.7K
C561 0.082
C521 0.047
C525 0.056
R523 15K
R521 43K
C523 100P
D501 MA165TA
R527 100
C529 16V10
R525 33K
R529 22K
C527 100P
C542 0.01
C531 0.082
C534 10V33
C535 0.068
R532 15K
R533 8.2K
C536 0.039
R531 270K
R534 82K
R535 82K
C537 0.1
C538 0.15
C539 4700P
0V
-7.4V
VEE
VCC
7.5V
2V
22K
3.3K
27K
15K
10K
3.9K
1.8K
GV 10dB
GV 6dB
R289 56K
R290 56K
C533 25V4.7
C524 100P
R522 33K
D502 MA165TA
C526 0.068
R524 15K
C522 0.068
C528 100P
R526 33K
R528 100
R538 27K
D503 MA165TA
R539 820K
R542 4.7K
C540 6.3V47
R543 4.7K
C541 6.3V47
R530 27K
D504 MA165TA
R564 2.7K
C562 0.082
C530 16V10
W902A
W901A
Q707
2SB621AQRSTA
REGULATOR
-29.9V
-36.4V
-30.5V
R707 1/4W4.7
C707 0.01
R708 4.7K
C706 35V10
D721 MA4270MTA
C737 50V100
C532 0.01
D658 MA165TA
D657 MA165TA
L153 1μH
D705 RL1N4003N02
R773 1/2W47
R774 1/2W27
Q726
2SC3940AQSTA
REGULATOR
6.2V
9.2V
6.8V
(6.2V)
D746 RL1N4003N02
C758 0.01
R777 1K
C759 10V47
D747 MA4068MTA
R779 1/2W47
D711 RL1N4003N02
CP101B
T.GND 1
+B(1) 2
VT 3
STEYE 4
NC 5
SD 6
+B(2) 7
To A TUNER CIRCUIT (CN101B) on SCHEMATIC DIAGRAM-2
(14.8V)
(7.3V)
Q723
2SC3940AQSTA
REGULATOR
7.3V
14.8V
8V
C733 0.01
R763 4.7K
R764 330
C740 16V10
D737 MA4082LTA
C715 25V6800
D718
D717
D726
C731 1000P
D720
D719
D727
C714 1000P
C741 0.1
D717-720,726,727 RL1N4003N02
C710 0.01
CP102B
DET 1
Rch IN 2
CE 3
Lch IN 4
DI 5
DO 6
CL 7
R230 1K
R229 1K
To A TUNER CIRCUIT (CN102B) on SCHEMATIC DIAGRAM-2
A
B
C
D
E
F
G
H
I
J
K
L

SCHEMATIC DIAGRAM-7

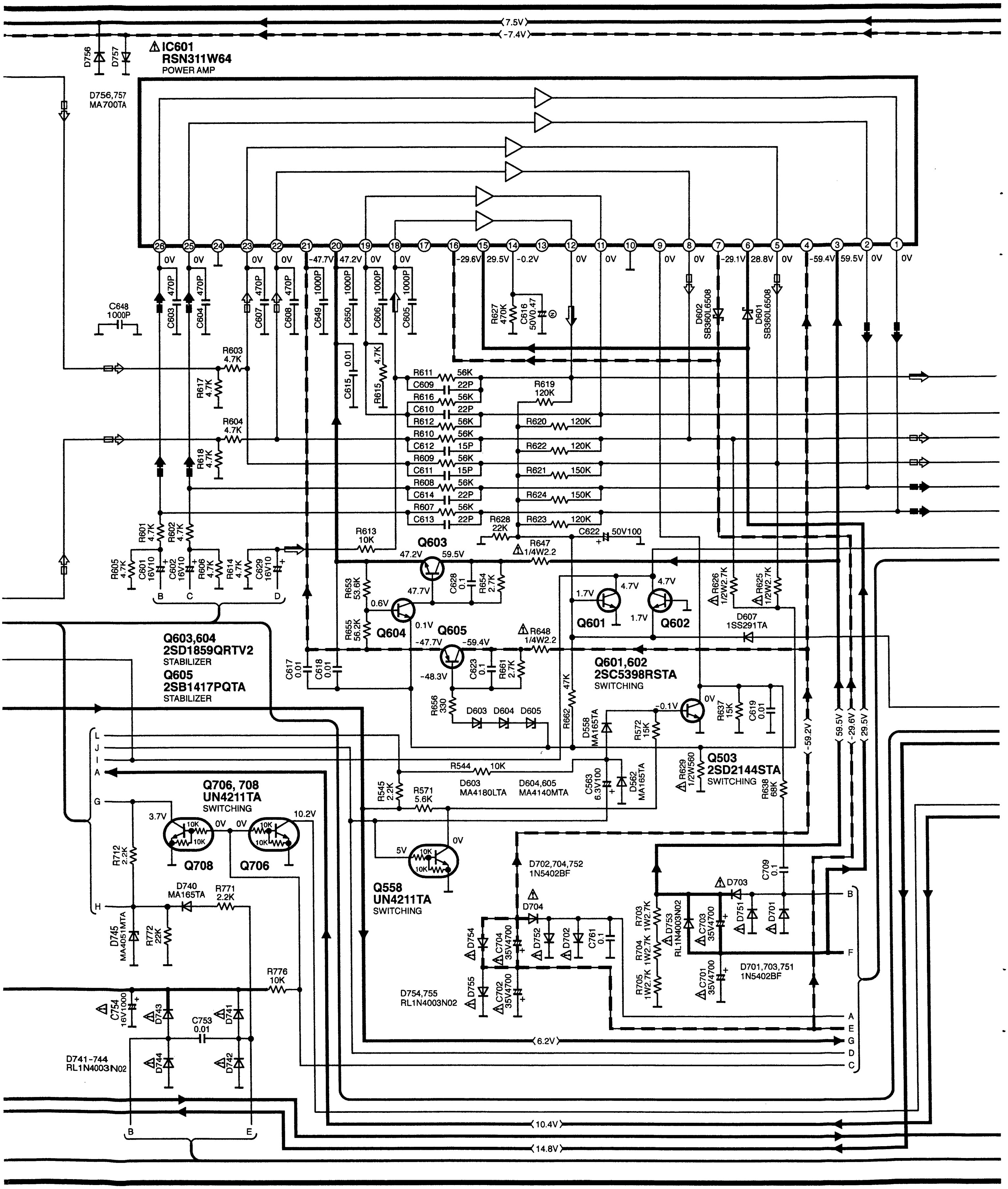
: POSITIVE VOLTAGE LINE

: NEGATIVE VOLTAGE LINE

: SURROUND SP.DRIVE SIGNAL LINE

: CENTER SP.DRIVE SIGNAL LINE

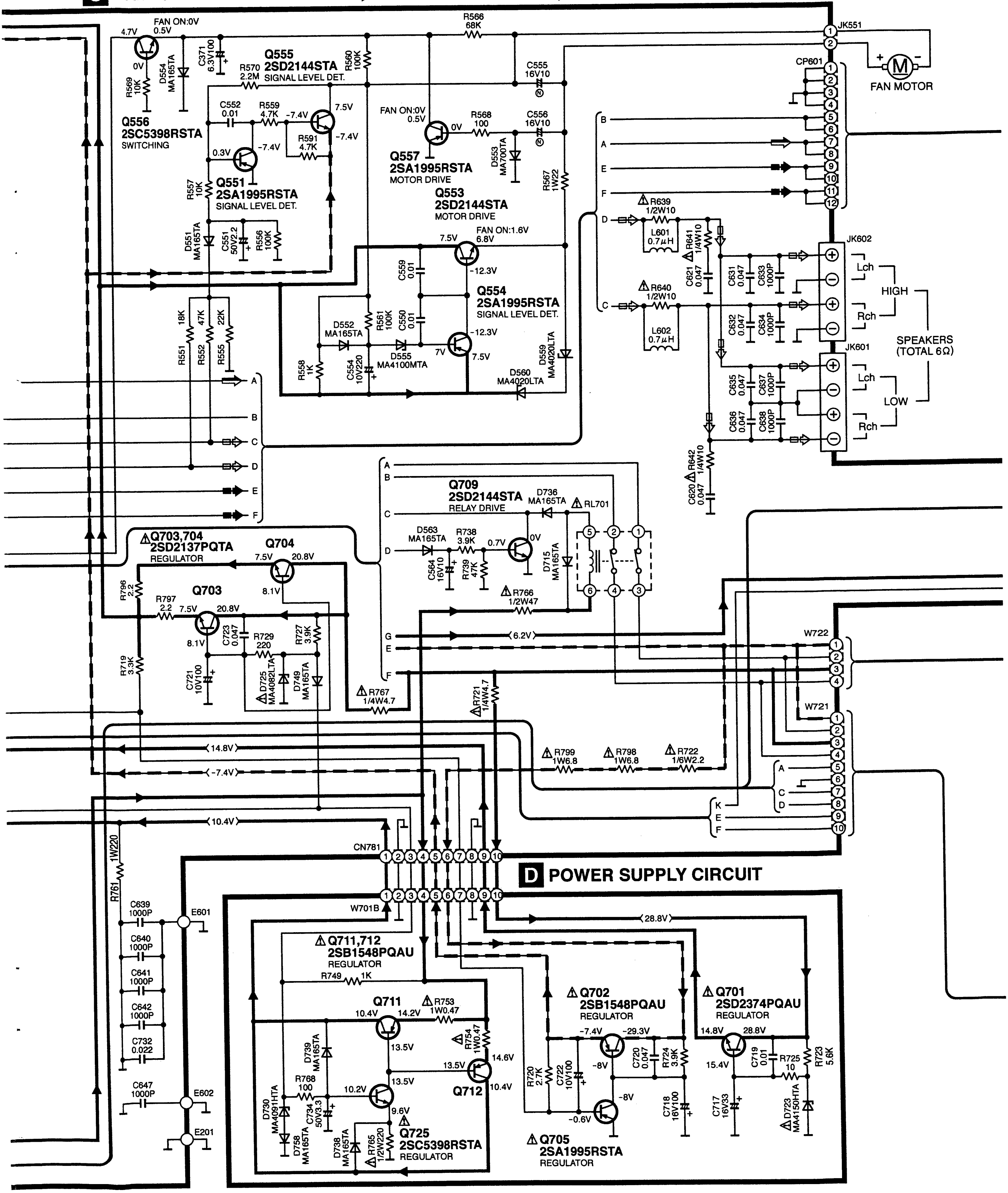
: SOURCE SIGNAL LINE


7.5V
-7.4V
D756
D757
D756,757
MA700TA
IC601
RSN311W64
POWER AMP
C648
1000P
C603 470P
C604 470P
C607 470P
C608 470P
C649 1000P
C650 1000P
C606 1000P
C605 1000P
-47.7V
47.2V
-29.6V
29.5V
-0.2V
-29.1V
28.8V
-59.4V
59.5V
0V
R627 470K
C616 50V0.47
D602 SB360L6508
D601 SB360L6508
R603 4.7K
R617 4.7K
R604 4.7K
R618 4.7K
C615 0.01
R615 4.7K
R611 56K
C609 22P
R616 56K
C610 22P
R612 56K
R610 56K
C612 15P
R609 56K
C611 15P
R608 56K
C614 22P
R607 56K
C613 22P
R619 120K
R620 120K
R622 120K
R621 150K
R624 150K
R623 120K
R628 22K
C622 50V100
R647 1/4W2.2
R613 10K
Q603
47.2V
59.5V
R601 4.7K
R602 4.7K
R605 4.7K
C601 16V10
C602 16V10
R606 4.7K
R614 4.7K
C629 16V10
B
C
D
R653 53.6K
47.7V
C628 0.1
R654 2.7K
0.6V
Q604
R655 56.2K
0.1V
Q605
-47.7V
-59.4V
R648 1/4W2.2
C617 0.01
C618 0.01
-48.3V
C623 0.1
R661 2.7K
R656 330
D603
D604
D605
R662 47K
1.7V
4.7V
Q601
Q602
R626 1/2W2.7K
R625 1/2W2.7K
D607 1SS291TA
Q603,604
2SD1859QRTV2
STABILIZER
Q605
2SB1417PQTA
STABILIZER
Q601,602
2SC5398RSTA
SWITCHING
D558 MA165TA
-0.1V
R572 15K
R637 15K
C619 0.01
-59.2V
59.5V
-29.6V
29.5V
L
J
I
A
G
H
R544 10K
R545 2.2K
R571 5.6K
D603 MA4180LTA
D604,605 MA4140MTA
C563 6.3V100
D562 MA165TA
R629 1/2W560
Q503
2SD2144STA
SWITCHING
R638 68K
Q706, 708
UN4211TA
SWITCHING
3.7V
10.2V
10K
R712 2.2K
Q708
Q706
5V
Q558
UN4211TA
SWITCHING
D702,704,752
1N5402BF
D704
D703
C709 0.1
D740 MA165TA
R771 2.2K
D745 MA4051MTA
R772 22K
D754
C704 35V4700
D752
D702
C761 0.1
R703 1W2.7K
D753 RL1N4003N02
C703 35V4700
D751
D701
F
R704 1W2.7K
R705 1W2.7K
C701 35V4700
D701,703,751
1N5402BF
R776 10K
C754 16V1000
D743
C753 0.01
D741
D755
C702 35V4700
D754,755
RL1N4003N02
6.2V
E
D741-744
RL1N4003N02
D744
D742
10.4V
14.8V

SCHEMATIC DIAGRAM-8

C MAIN CIRCUIT

→ : POSITIVE VOLTAGE LINE
⇢ : NEGATIVE VOLTAGE LINE
➡ : SURROUND SP.DRIVE SIGNAL LINE
⇨ : CENTER SP.DRIVE SIGNAL LINE
⇨ : SOURCE SIGNAL LINE



FAN ON:0V 0.5V
4.7V
0V
R569 10K
D554 MA165TA
C371 6.3V100
Q556 2SC5398RSTA SWITCHING
Q555 2SD2144STA SIGNAL LEVEL DET.
R570 2.2M
R560 100K
R566 68K
C555 16V10
C552 0.01
R559 4.7K
-7.4V
7.5V
R591 4.7K
0.3V
Q551 2SA1995RSTA SIGNAL LEVEL DET.
R557 10K
D551 MA165TA
C551 50V2.2
R556 100K
FAN ON:0V 0.5V
Q557 2SA1995RSTA MOTOR DRIVE
R568 100
C556 16V10
D553 MA700TA
R567 1W22
Q553 2SD2144STA MOTOR DRIVE
FAN ON:1.6V
6.8V
-12.3V
C559 0.01
Q554 2SA1995RSTA SIGNAL LEVEL DET.
D552 MA165TA
R561 100K
C550 0.01
R558 1K
C554 10V220
D555 MA4100MTA
7V
D559 MA4020LTA
D560 MA4020LTA
R551 18K
R552 47K
R555 22K
A
B
C
D
E
F
JK551
FAN MOTOR
CP601
JK602
Lch
Rch
HIGH
JK601
LOW
SPEAKERS (TOTAL 6Ω)
R639 1/2W10
L601 0.7μH
R641 1/4W10
C621 0.047
C631 0.047
C633 1000P
R640 1/2W10
L602 0.7μH
C632 0.047
C634 1000P
C635 0.047
C637 1000P
C636 0.047
C638 1000P
R642 1/4W10
C620 0.047
Q709 2SD2144STA RELAY DRIVE
D736 MA165TA
RL701
D563 MA165TA
R738 3.9K
0.7V
C564 16V10
R739 47K
D715 MA165TA
R766 1/2W47
G
6.2V
W722
W721
Q703,704 2SD2137PQTA REGULATOR
Q704
20.8V
8.1V
Q703
R796 2.2
R797 2.2
C723 0.047
R729 220
R727 3.9K
R719 3.3K
C721 10V100
D725 MA4082LTA
D749 MA165TA
R767 1/4W4.7
R721 1/4W4.7
14.8V
-7.4V
10.4V
R799 1W6.8
R798 1W6.8
R722 1/6W2.2
K
CN781
R761 1W220
C639 1000P
C640 1000P
C641 1000P
C642 1000P
C732 0.022
C647 1000P
E601
E602
E201
D POWER SUPPLY CIRCUIT
W701B
Q711,712 2SB1548PQAU REGULATOR
R749 1K
Q711
R753 1W0.47
10.4V
14.2V
13.5V
R754 1W0.47
14.6V
Q712
D739 MA165TA
R768 100
10.2V
9.6V
D730 MA4091HTA
C734 50V3.3
D758 MA165TA
D738 MA165TA
R765 1/2W220
Q725 2SC5398RSTA REGULATOR
28.8V
Q702 2SB1548PQAU REGULATOR
-29.3V
-8V
-0.6V
R720 2.7K
C722 10V100
C720 0.047
R724 3.9K
C718 16V100
Q705 2SA1995RSTA REGULATOR
Q701 2SD2374PQAU REGULATOR
15.4V
C719 0.01
R725 10
R723 5.6K
C717 16V33
D723 MA4150HTA

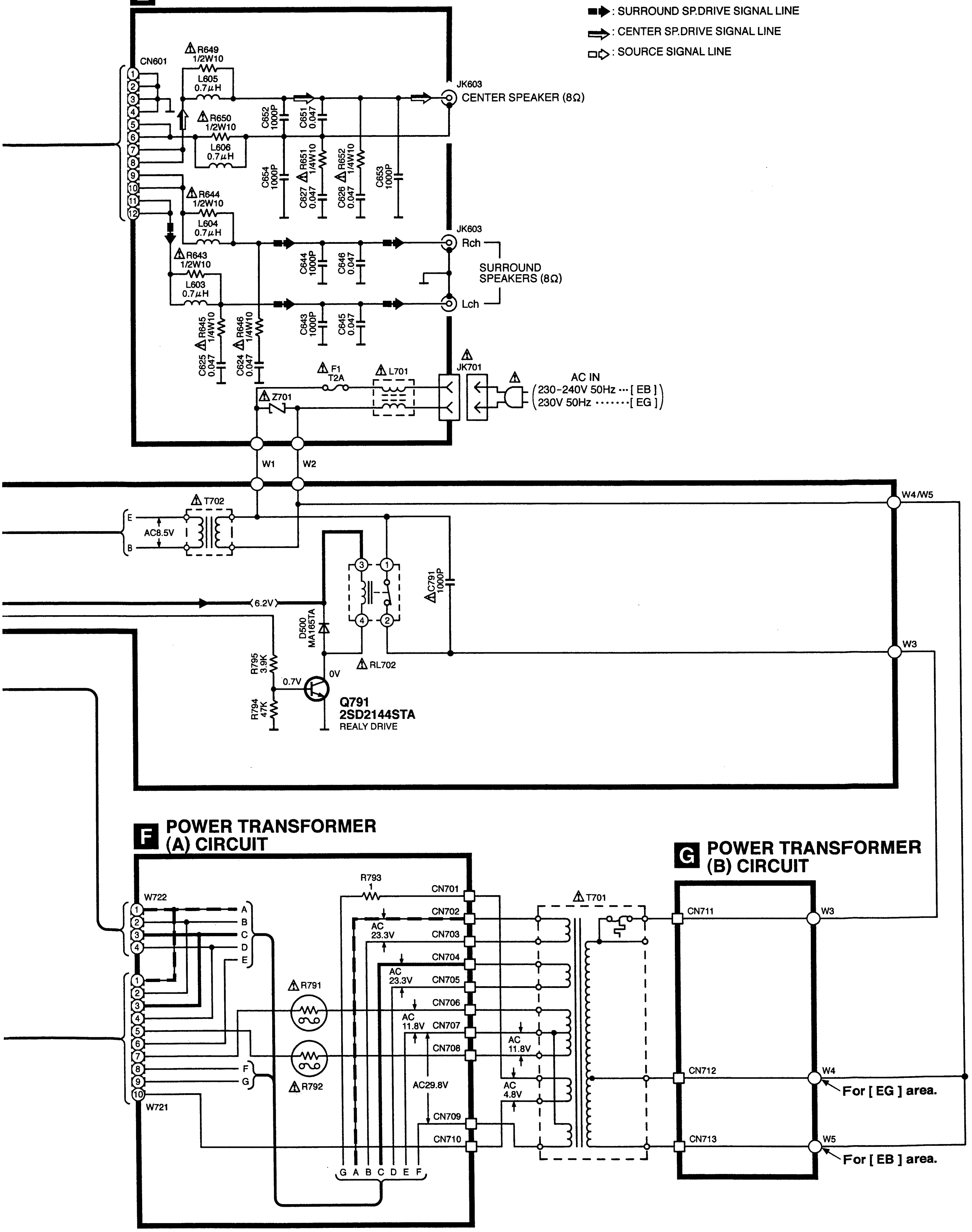
SCHEMATIC DIAGRAM-9

: POSITIVE VOLTAGE LINE
: NEGATIVE VOLTAGE LINE
: SURROUND SP.DRIVE SIGNAL LINE
: CENTER SP.DRIVE SIGNAL LINE
: SOURCE SIGNAL LINE

E SPEAKER TERMINAL CIRCUIT

F POWER TRANSFORMER (A) CIRCUIT

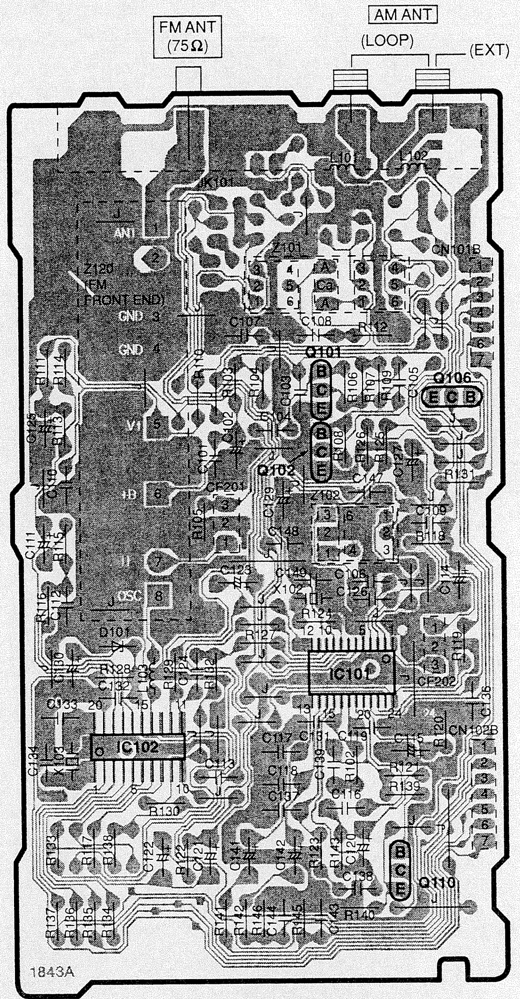
G POWER TRANSFORMER (B) CIRCUIT


CN601
R649 1/2W10
L605 0.7μH
R650 1/2W10
L606 0.7μH
C652 1000P
C651 0.047
C654 1000P
R651 1/4W10
C627 0.047
R652 1/4W10
C626 0.047
C653 1000P
JK603
CENTER SPEAKER (8Ω)
R644 1/2W10
L604 0.7μH
R643 1/2W10
L603 0.7μH
C644 1000P
C646 0.047
C643 1000P
C645 0.047
Rch
Lch
SURROUND SPEAKERS (8Ω)
R645 1/4W10
C625 0.047
R646 1/4W10
C624 0.047
F1 T2A
L701
JK701
Z701
AC IN
230-240V 50Hz ··· [EB]
230V 50Hz ······· [EG]
W1
W2
W4/W5
T702
E
AC8.5V
B
C791 1000P
6.2V
D500 MA165TA
R795 3.9K
0.7V
0V
RL702
R794 47K
Q791
2SD2144STA
REALY DRIVE
W3
W722
A
B
C
D
E
F
G
R793 1
CN701
CN702
AC 23.3V
CN703
CN704
AC 23.3V
CN705
CN706
AC 11.8V
CN707
CN708
AC29.8V
CN709
CN710
R791
R792
W721
G A B C D E F
T701
AC 11.8V
AC 4.8V
CN711
CN712
CN713
W3
W4
For [EG] area.
W5
For [EB] area.

■ Printed Circuit Board Diagram

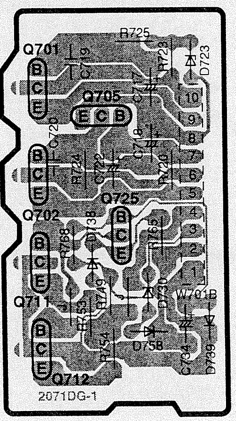
- This circuit board diagram may be modified at any time with the development of new technology.

A TUNER P.C.B.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
FM ANT
(75Ω)
AM ANT
(LOOP)
(EXT)
JK101
L101
L102
ANT
Z101
CN101B
Z120
(FM
FRONT END)
GND 3
GND 4
V1 5
+B 6
7
OSC 8
Q101
Q102
Q106
Q110
IC101
IC102
CF201
CF202
X102
X103
D101
CN102B
1843A

(REP2592C-T)

D POWER SUPPLY P.C.B.

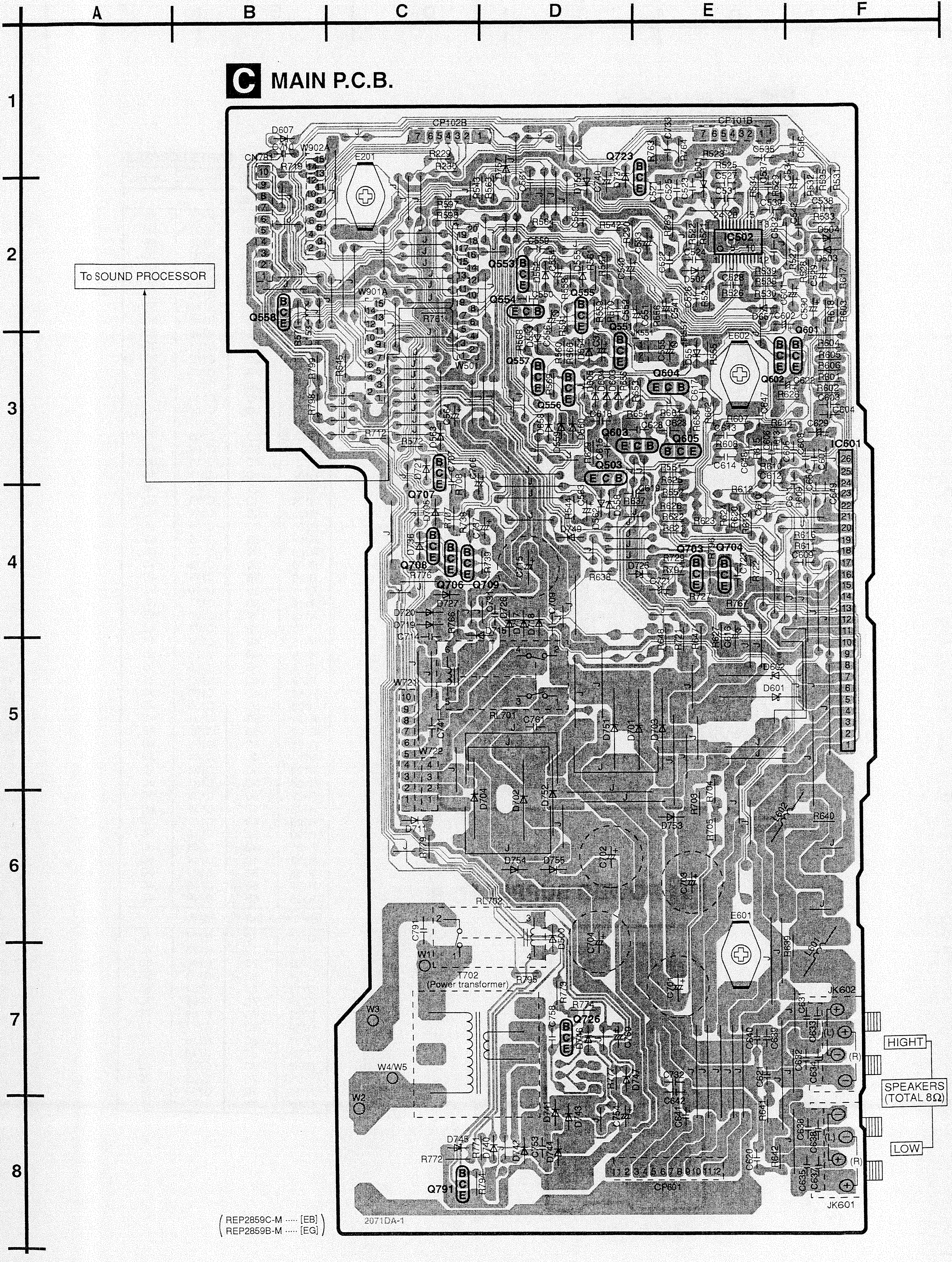

Q701
Q702
Q705
Q711
Q712
Q725
R725
D723
D738
D758
D739
W701B
2071DG-1

(REP2859C-M ····· [EB])
(REP2859B-M ····· [EG])

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
A TUNER P.C.B.			
IC101	4C	R136	5B
IC102	5B	R137	5B
Q101	3C	R138	5B
Q102	3C	R139	5C
Q106	3D	R140	5C
Q110	5C	R141	5C
D101	4B	R142	5C
L101	2C	R143	5C
L102	2C	R145	5C
L103	4B	R146	5C
Z101	2C	C101	3C
Z102	4C	C102	3C
Z120	3B	C103	3C
CF201	3C	C104	3C
CF202	4D	C105	3C
X102	4C	C106	4C
X103	5B	C107	3C
CN101B	3D	C108	3C
CN102B	5D	C109	4D
JK101	2C	C110	3B
R102	5C	C111	4B
R103	3C	C112	4B
R104	3C	C113	5C
R105	4B	C114	4D
R106	3C	C115	5C
R107	3C	C116	5C
R108	3C	C117	5C
R109	3C	C118	5C
R110	3B	C119	4C
R111	3B	C120	5C
R112	3C	C121	5B
R113	3B	C122	5B
R114	3B	C123	4C
R115	4B	C124	4B
R116	4B	C125	3B
R117	5B	C126	4C
R118	4D	C127	3C
R119	4D	C129	3C
R120	5D	C130	4B
R121	5C	C131	4C
R122	5B	C132	4B
R123	5C	C133	4B
R124	4C	C134	5B
R125	3C	C136	4D
R126	3C	C137	5C
R127	4C	C138	5C
R128	4B	C139	5C
R129	4B	C141	5C
R130	5B	C142	5C
R131	3D	C143	5C
R132	4C	C144	5C
R133	5B	C147	3C
R134	5B	C148	4C
R135	5B	C149	4C
D POWER SUPPLY P.C.B.			
Q701	7B	R724	7C
Q702	7B	R725	7C
Q705	7C	R749	8C
Q711	8B	R753	8C
Q712	8B	R754	8C
Q725	7C	R765	7C
D723	7C	R768	7B
D730	8C	C717	7C
D738	8C	C718	7C
D739	8C	C719	7C
D758	8C	C720	7B
W701B	7C	C722	7C
R720	7C	C734	8C
R723	7C		

C MAIN P.C.B.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
To SOUND PROCESSOR
CP102B
CP101B
CN781
W902A
W901A
E201
E602
E601
IC502
IC601
Q558
Q553
Q554
Q555
Q551
Q557
Q556
Q723
Q604
Q602
Q601
Q603
Q605
Q503
Q707
Q708
Q706
Q709
Q703
Q704
Q726
Q791
RL701
RL702
T702
(Power transformer)
W721
W722
W1
W2
W3
W4/W5
CP601
JK602
JK601
HIGHT
(R)
SPEAKERS
(TOTAL 8Ω)
LOW
2071DA-1

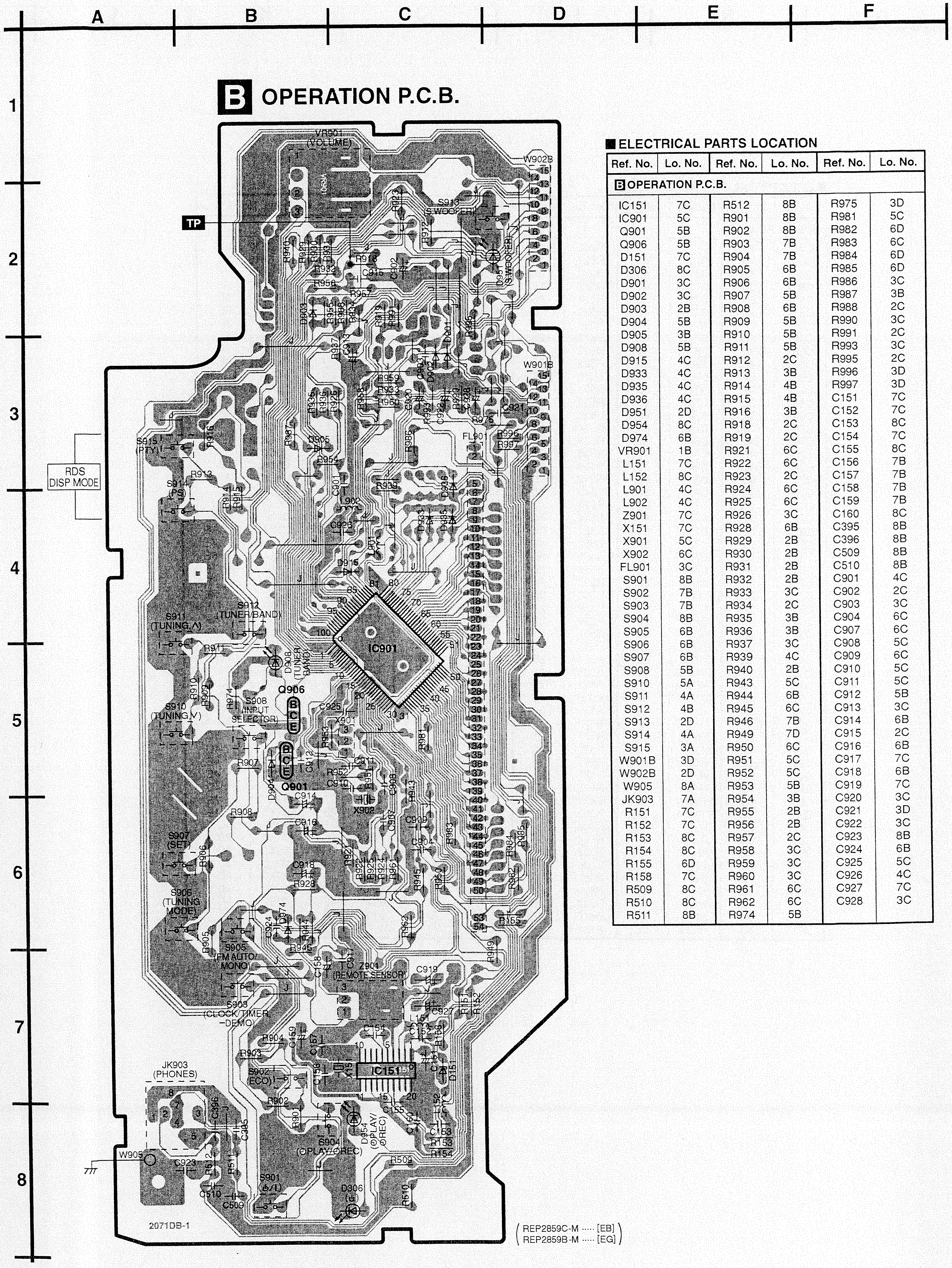
(REP2859C-M ····· [EB]
REP2859B-M ····· [EG])

G H I J K L

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
C **MAIN P.C.B.**											
IC502	2E	D717	4D	R290	2D	R612	4E	R776	4C	C612	3E
IC601	4F	D718	4D	R521	2E	R613	3E	R777	7D	C613	3E
Q503	3D	D719	4C	R522	2E	R614	3E	R779	6C	C614	3E
Q551	3D	D720	4C	R523	1E	R615	3E	R794	8C	C615	3D
Q553	2D	D721	3C	R524	2E	R616	4F	R795	7D	C616	5E
Q554	2D	D725	4E	R525	1E	R617	2F	R796	4E	C617	3E
Q555	2D	D726	4D	R526	2E	R618	2F	R797	4E	C618	3D
Q556	3D	D727	4C	R527	2F	R619	4E	R798	3B	C619	4E
Q557	3D	D736	4C	R528	2F	R620	4E	R799	3B	C620	8E
Q558	2B	D737	2D	R529	2E	R621	4E	C371	3D	C621	7E
Q601	3F	D740	8D	R530	2E	R622	4E	C521	2E	C622	3F
Q602	3E	D741	8D	R531	2F	R623	4E	C522	2E	C623	3E
Q603	3E	D742	8D	R532	2F	R624	4E	C523	2E	C628	3E
Q604	3E	D743	8D	R533	2F	R625	4E	C524	2E	C629	3F
Q605	3E	D744	8D	R534	2E	R626	4E	C525	2E	C631	7F
Q703	4E	D745	8C	R535	2F	R627	5E	C526	2E	C632	7F
Q704	4E	D746	7D	R538	2E	R628	3E	C527	2E	C633	7F
Q706	4C	D747	7D	R539	2E	R629	3D	C528	2E	C634	7F
Q707	3C	D749	4D	R542	2D	R637	4D	C529	2F	C635	8F
Q708	4C	D751	5D	R543	2C	R638	4D	C530	2F	C636	8F
Q709	4C	D752	6D	R544	4D	R639	7E	C531	2E	C637	8F
Q723	2E	D753	6E	R545	3C	R640	6F	C532	2E	C638	8F
Q726	7D	D754	6D	R551	3E	R641	8E	C533	2E	C639	7E
Q791	8C	D755	6D	R552	4E	R642	8E	C534	2F	C640	7E
D500	7D	D756	2D	R555	3E	R647	5E	C535	1E	C641	8E
D501	2E	D757	1D	R556	2E	R648	5E	C536	1F	C642	7E
D502	2E	L153	2B	R557	3E	R653	3E	C537	2E	C647	3E
D503	2F	L601	7F	R558	2D	R654	3E	C538	2F	C648	3E
D504	2F	L602	6E	R559	2D	R655	3E	C539	2E	C649	4F
D551	3E	T702	7C	R560	3D	R656	3D	C540	2D	C650	4F
D552	2D	RL701	5D	R561	2D	R661	3E	C541	2E	C701	7E
D553	3D	RL702	6D	R563	2D	R662	3E	C542	2F	C702	6D
D554	3D	CN781	2B	R564	2D	R703	6E	C550	2D	C703	6E
D555	2D	CP101B	1E	R566	3D	R704	6E	C551	2E	C704	7D
D558	4D	CP102B	1C	R567	2D	R705	6E	C552	2D	C706	3C
D559	3D	CP601	8E	R568	3D	R707	4C	C554	2D	C707	3C
D560	3D	W1	7C	R569	3D	R708	4C	C555	3E	C709	4D
D562	4D	W2	8C	R570	2D	R712	3C	C556	2D	C710	1B
D563	3C	W3	7C	R571	2B	R719	1B	C559	2D	C714	5C
D601	5E	W4/W5	7C	R572	3C	R721	5E	C561	2D	C715	4D
D602	5E	W501	2C	R591	2D	R722	4E	C562	2D	C721	4E
D603	3D	W721	5C	R597	2C	R727	4E	C563	4D	C723	4E
D604	3D	W722	5C	R598	2C	R729	4E	C564	3C	C731	4D
D605	3D	W901A	3C	R601	3F	R738	4C	C601	2F	C732	7E
D607	1B	W902A	2B	R602	3F	R739	4D	C602	2E	C733	1E
D657	2E	JK551	3E	R603	2F	R761	2C	C603	3F	C737	4C
D658	3D	JK601	8F	R604	3F	R763	1E	C604	3F	C740	2D
D701	5E	JK602	7F	R605	3F	R764	1E	C605	3F	C741	5C
D702	6D	E201	2C	R606	3F	R766	4C	C606	3E	C753	8D
D703	5E	E601	7E	R607	3E	R767	4E	C607	3F	C754	8D
D704	6C	E602	3E	R608	3E	R771	8C	C608	3F	C758	7D
D705	4C	R229	1C	R609	4F	R772	8C	C609	4F	C759	7D
D711	6C	R230	1C	R610	3E	R773	7D	C610	4E	C761	5D
D715	4D	R289	2E	R611	4F	R774	7D	C611	4F	C791	6C

B OPERATION P.C.B.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TP
VR901 (VOLUME)
W902B
S913 (S.WOOFER)
D951 (S.WOOFER)
W901B
FL901
RDS DISP MODE
S915 (PTY)
S914 (PS)
R913
S912 (TUNER/BAND)
S911 (TUNING ∧)
D908 (TUNER BAND)
IC901
Q906
Q901
S910 (TUNING ∨)
S908 (INPUT SELECTOR)
X901
X902
S907 (SET)
S906 (TUNING MODE)
S905 (FM AUTO/MONO)
S903 (CLOCK/TIMER, –DEMO)
Z901 (REMOTE SENSOR)
IC151
JK903 (PHONES)
S902 (ECO)
S904 (▷PLAY/○REC)
D954 (▷PLAY/○REC)
S901 (⏻/I)
D306
W905
2071DB-1

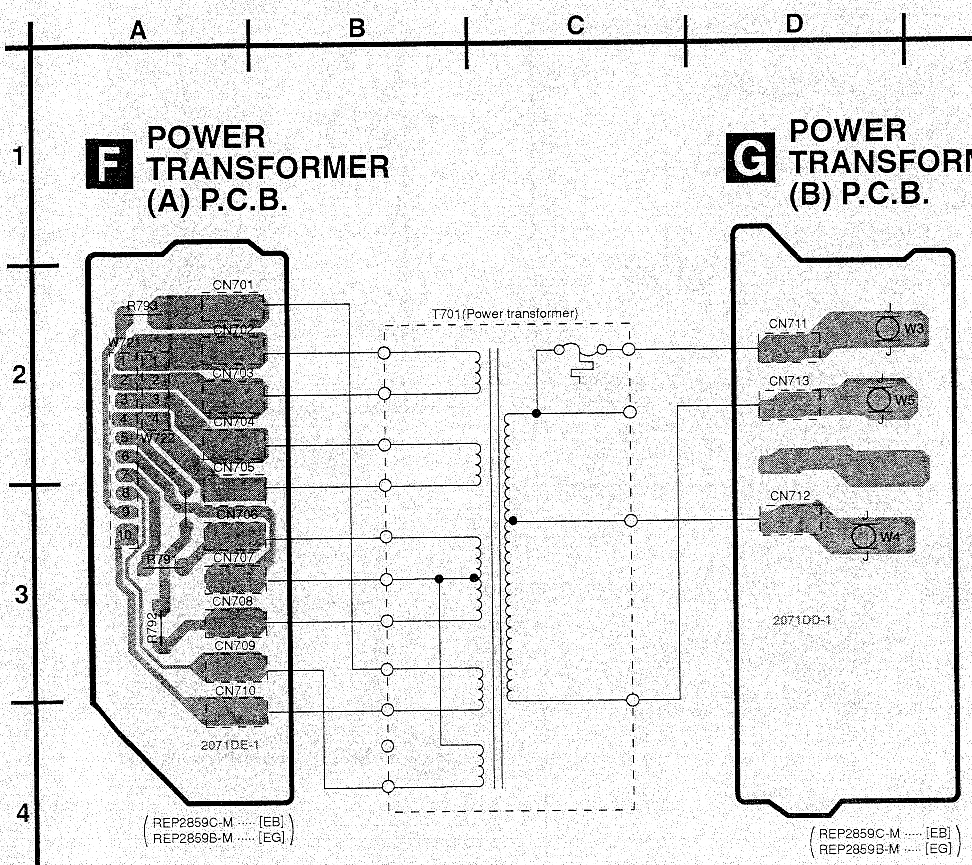
(REP2859C-M ..... [EB])
(REP2859B-M ..... [EG])

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
B OPERATION P.C.B.					
IC151	7C	R512	8B	R975	3D
IC901	5C	R901	8B	R981	5C
Q901	5B	R902	8B	R982	6D
Q906	5B	R903	7B	R983	6C
D151	7C	R904	7B	R984	6D
D306	8C	R905	6B	R985	6D
D901	3C	R906	6B	R986	3C
D902	3C	R907	5B	R987	3B
D903	2B	R908	6B	R988	2C
D904	5B	R909	5B	R990	3C
D905	3B	R910	5B	R991	2C
D908	5B	R911	5B	R993	3C
D915	4C	R912	2C	R995	2C
D933	4C	R913	3B	R996	3D
D935	4C	R914	4B	R997	3D
D936	4C	R915	4B	C151	7C
D951	2D	R916	3B	C152	7C
D954	8C	R918	2C	C153	8C
D974	6B	R919	2C	C154	7C
VR901	1B	R921	6C	C155	8C
L151	7C	R922	6C	C156	7B
L152	8C	R923	2C	C157	7B
L901	4C	R924	6C	C158	7B
L902	4C	R925	6C	C159	7B
Z901	7C	R926	3C	C160	8C
X151	7C	R928	6B	C395	8B
X901	5C	R929	2B	C396	8B
X902	6C	R930	2B	C509	8B
FL901	3C	R931	2B	C510	8B
S901	8B	R932	2B	C901	4C
S902	7B	R933	3C	C902	2C
S903	7B	R934	2C	C903	3C
S904	8B	R935	3B	C904	6C
S905	6B	R936	3B	C907	6C
S906	6B	R937	3C	C908	5C
S907	6B	R939	4C	C909	6C
S908	5B	R940	2B	C910	5C
S910	5A	R943	5C	C911	5C
S911	4A	R944	6B	C912	5B
S912	4B	R945	6C	C913	3C
S913	2D	R946	7B	C914	6B
S914	4A	R949	7D	C915	2C
S915	3A	R950	6C	C916	6B
W901B	3D	R951	5C	C917	7C
W902B	2D	R952	5C	C918	6B
W905	8A	R953	5B	C919	7C
JK903	7A	R954	3B	C920	3C
R151	7C	R955	2B	C921	3D
R152	7C	R956	2B	C922	3C
R153	8C	R957	2C	C923	8B
R154	8C	R958	3C	C924	6B
R155	6D	R959	3C	C925	5C
R158	7C	R960	3C	C926	4C
R509	8C	R961	6C	C927	7C
R510	8C	R962	6C	C928	3C
R511	8B	R974	5B		

F POWER TRANSFORMER (A) P.C.B.

G POWER TRANSFORMER (B) P.C.B.


A
B
C
D
E
F
1
2
3
4
CN701
R793
W721
CN702
CN703
CN704
W722
CN705
CN706
CN707
R791
R792
CN708
CN709
CN710
1
2
3
4
5
6
7
8
9
10
2071DE-1
T701(Power transformer)
CN711
W3
CN713
W5
CN712
W4
2071DD-1

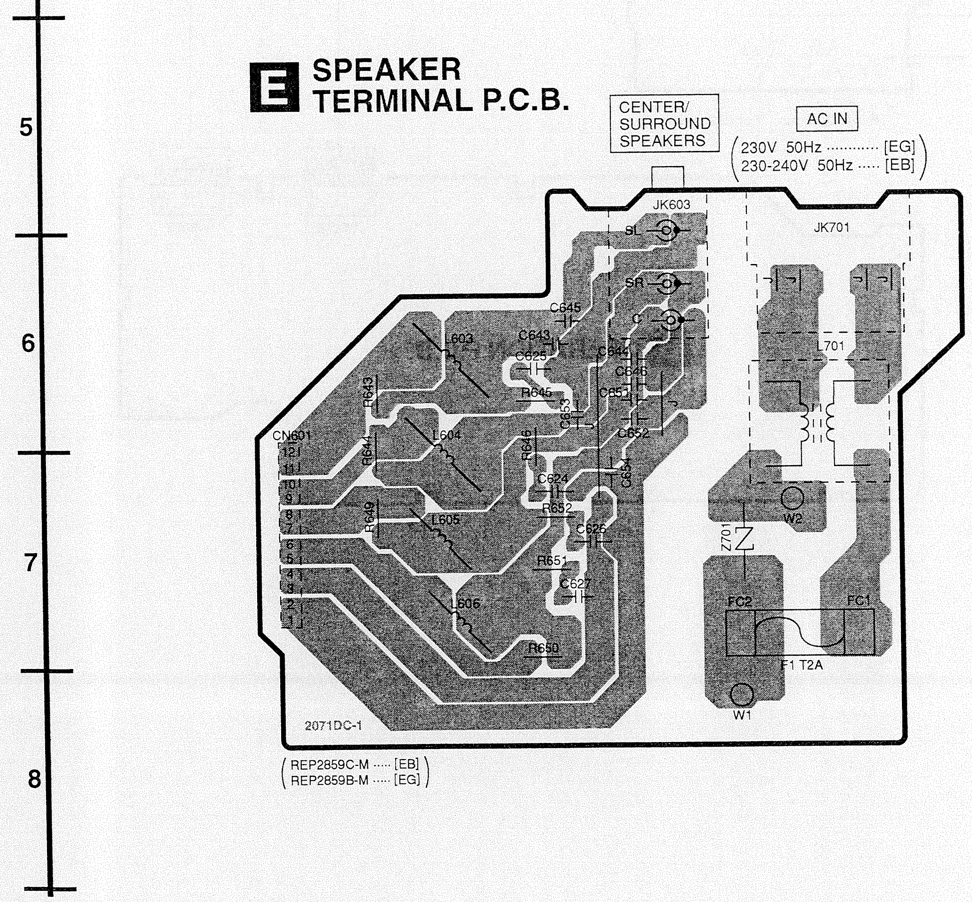
(REP2859C-M ····· [EB]
REP2859B-M ····· [EG])

(REP2859C-M ····· [EB]
REP2859B-M ····· [EG])

■ **ELECTRICAL PARTS LOCATION**

Ref. No.	Lo. No.	Ref. No.	Lo. No.
E SPEAKER TERMINAL P.C.B.			
L603	6B	R646	6C
L604	6B	R649	7B
L605	7B	R650	7C
L606	7B	R651	7C
L701	6D	R652	7C
Z701	7D	C624	7C
F1	7D	C625	6C
CN601	7B	C626	7C
W1	8D	C627	7C
W2	7D	C643	6C
JK603	6C	C644	6C
JK701	6D	C645	6C
FC1	7D	C646	6C
FC2	7D	C651	6C
R643	6B	C652	6C
R644	6B	C653	6C
R645	6C	C654	7C
F POWER TRANSFORMER(A) P.C.B.			
T701	2B	CN708	3A
CN701	2A	CN709	3A
CN702	2A	CN710	4A
CN703	2A	W721	2A
CN704	2A	W722	2A
CN705	3A	R791	3A
CN706	3A	R792	3A
CN707	3A	R793	2A
G POWER TRANSFORMER(B) P.C.B.			
CN711	2D	W3	2D
CN712	3D	W4	3D
CN713	2D	W5	2D

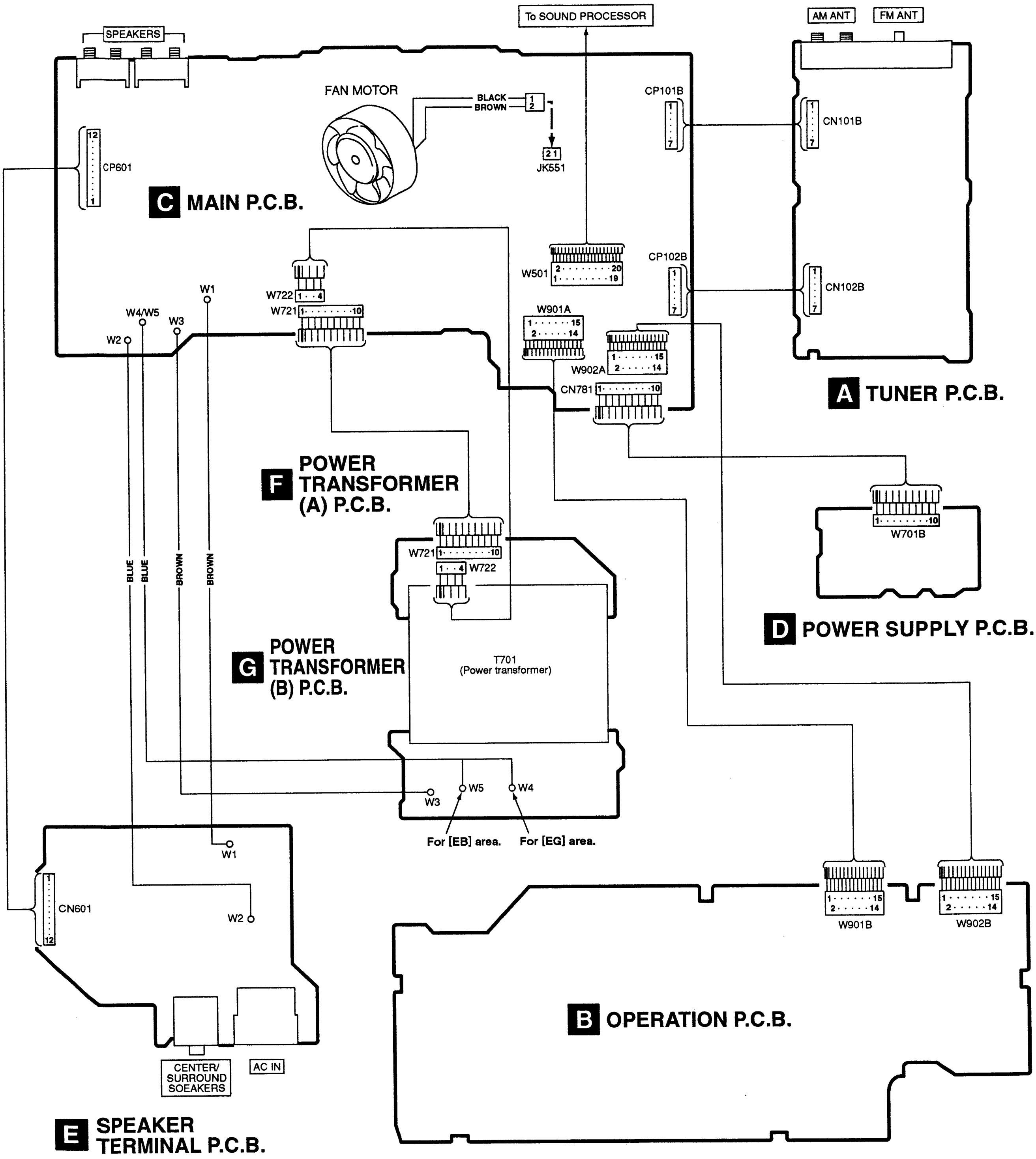
E SPEAKER TERMINAL P.C.B.


5
6
7
8
CENTER/
SURROUND
SPEAKERS
AC IN
JK603
SL
SR
C
JK701
C645
L603
C643
C625
C644
C646
R645
C651
R643
C653
C652
CN601
R644
L604
R646
C654
C624
R652
12
11
10
9
8
7
6
5
4
3
2
1
R649
L605
C626
R651
C627
L606
R650
L701
W2
Z701
FC2
FC1
F1 T2A
W1
2071DC-1

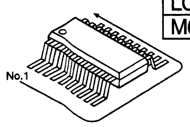
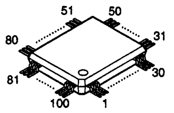
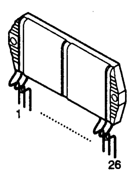
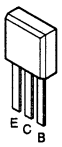
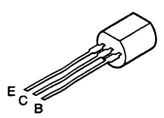
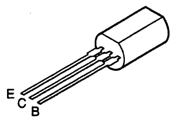
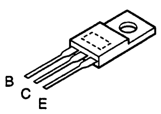
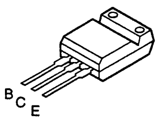
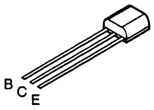
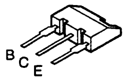
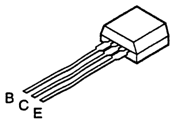
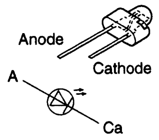
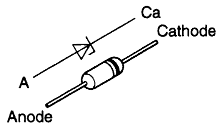
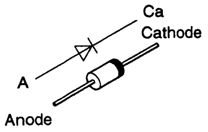
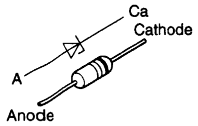
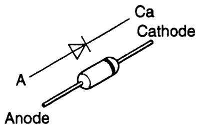
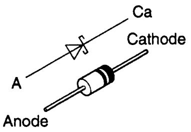
(230V 50Hz ············ [EG]
230-240V 50Hz ····· [EB])

(REP2859C-M ····· [EB]
REP2859B-M ····· [EG])

■ Wiring Connection Diagram


To SOUND PROCESSOR
AM ANT
FM ANT
SPEAKERS
FAN MOTOR
BLACK
BROWN
1
2
21
JK551
CP101B
CN101B
12
CP601
1
C MAIN P.C.B.
W501
2 · · · · · · · · 20
1 · · · · · · · · 19
CP102B
CN102B
W1
W722
1 · · 4
W4/W5
W3
W721
1 · · · · · · · · 10
W2
W901A
1 · · · · · · 15
2 · · · · · 14
W902A
1 · · · · · · 15
2 · · · · · 14
CN781
1 · · · · · · · · 10
A TUNER P.C.B.
F POWER TRANSFORMER (A) P.C.B.
W701B
1 · · · · · · · · 10
BLUE
BLUE
BROWN
BROWN
W721
1 · · · · · · · · 10
1 · · 4
W722
D POWER SUPPLY P.C.B.
G POWER TRANSFORMER (B) P.C.B.
T701
(Power transformer)
W3
W5
W4
For [EB] area.
For [EG] area.
W1
CN601
W2
12
W901B
1 · · · · · · 15
2 · · · · · 14
W902B
1 · · · · · · 15
2 · · · · · 14
B OPERATION P.C.B.
CENTER/ SURROUND SOEAKERS
AC IN
E SPEAKER TERMINAL P.C.B.

■ Type Illustration of IC's, Transistors and Diodes

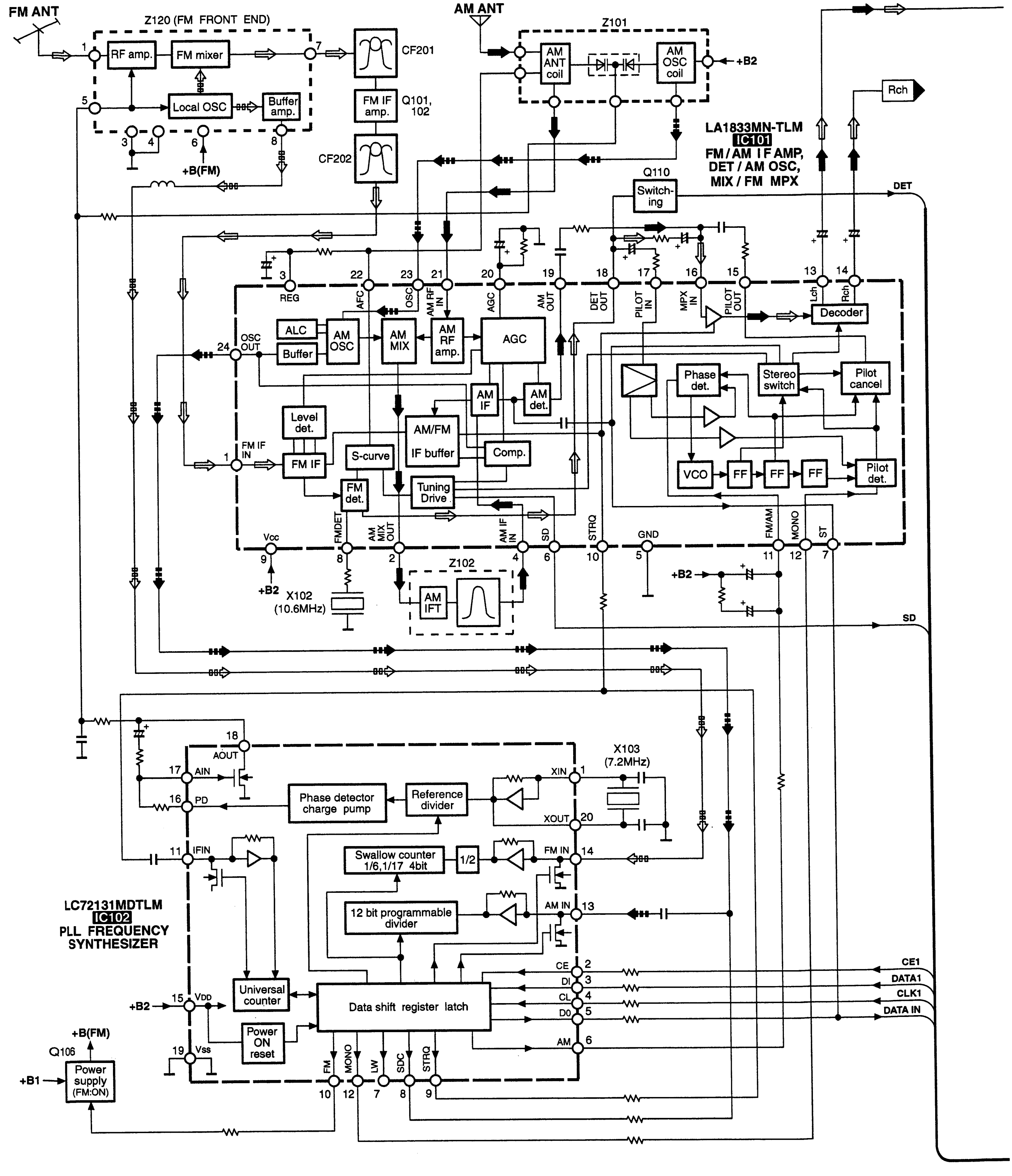
LA1833MN-TLM 24PIN LC72131MDTLM 20PIN LC72721NMTLM 20PIN M62456FPE1 24PIN 		LC8A524A5M07  51 50 80 31 81 30 100 1	RSN311W64 		2SC2787LTA 2SC3311ARSTA UN4111TA UN4211TA UN4212TA
2SB621AQRSTA 	2SC3940AQSTA 	2SB1548PQAU 2SD2374PQAU 	2SB1417PQTA 2SD2137PQTA 	2SA1995RSTA 2SC5398RSTA 	2SD1859QRTV2 
2SD2144STA 	 Anode Cathode A Ca	LNJ301MPUJAD LNJ801TPSJAD LNJ401NPYJA	 Ca Cathode A Anode	MA4091HTA MA4100MTA MA4140MTA MA4150HTA MA4180LTA	1N5402BF RL1N4003N02  Ca Cathode A Anode
 Ca Cathode A Anode	MA4020LTA MA4051MTA MA4068MTA MA4082LTA MA4270MTA	MA165TA MA700TA 1SS291TA  Ca Cathode A Anode	SB360L6508  Ca Cathode A Anode		

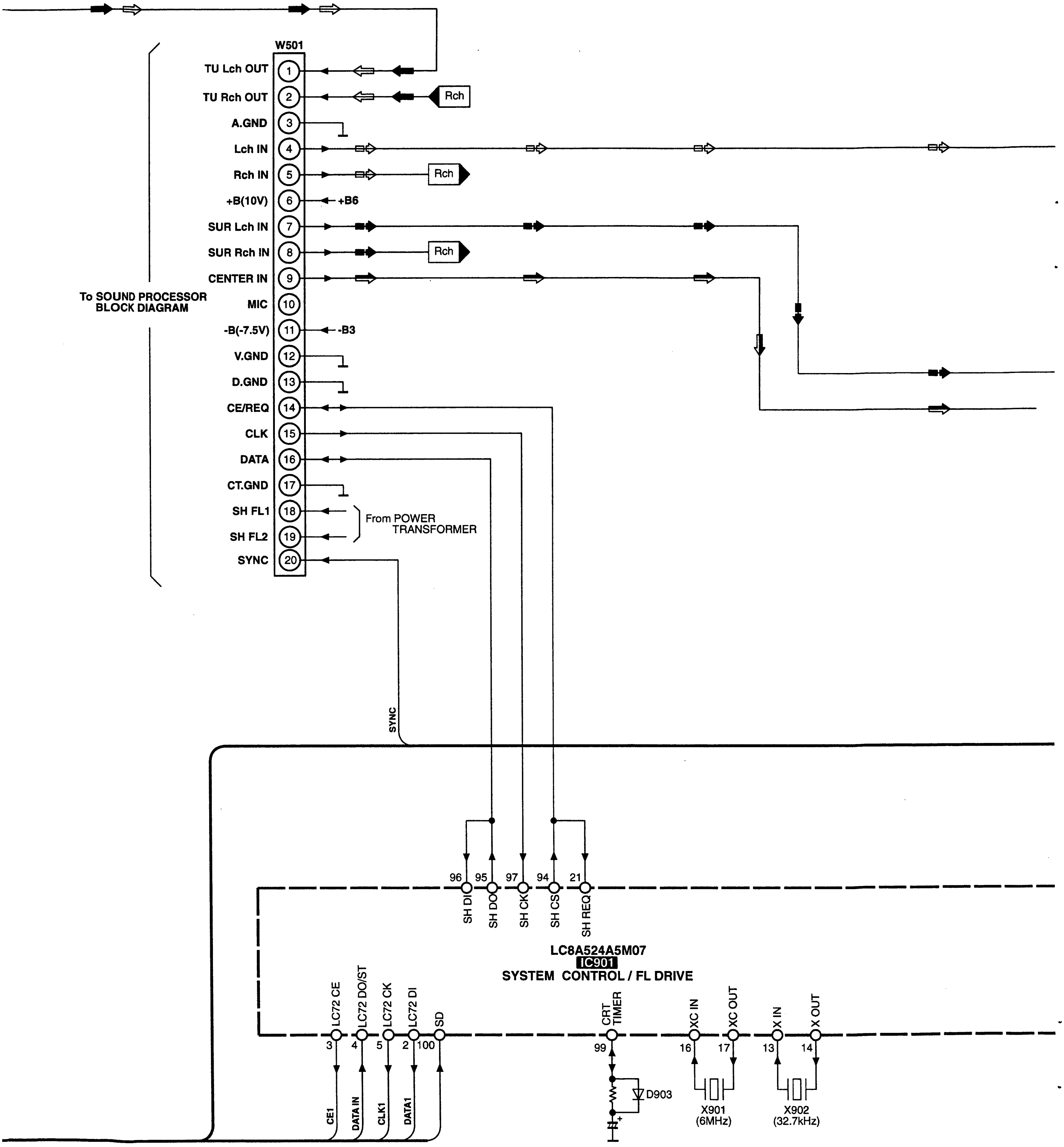
■ Terminal Function of IC's

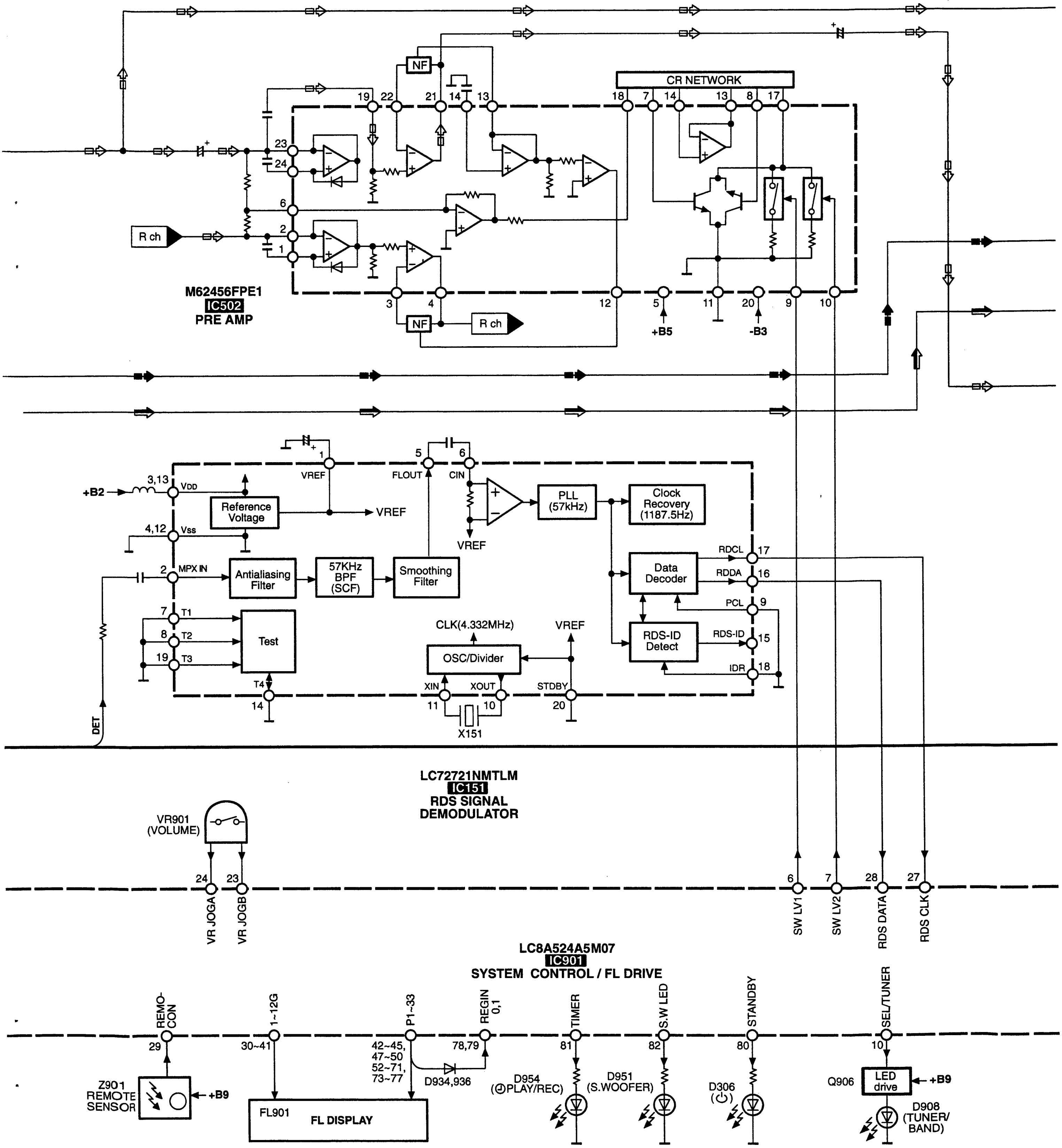
• IC901 (LC8A524A5M07) : System Control/ FL Drive

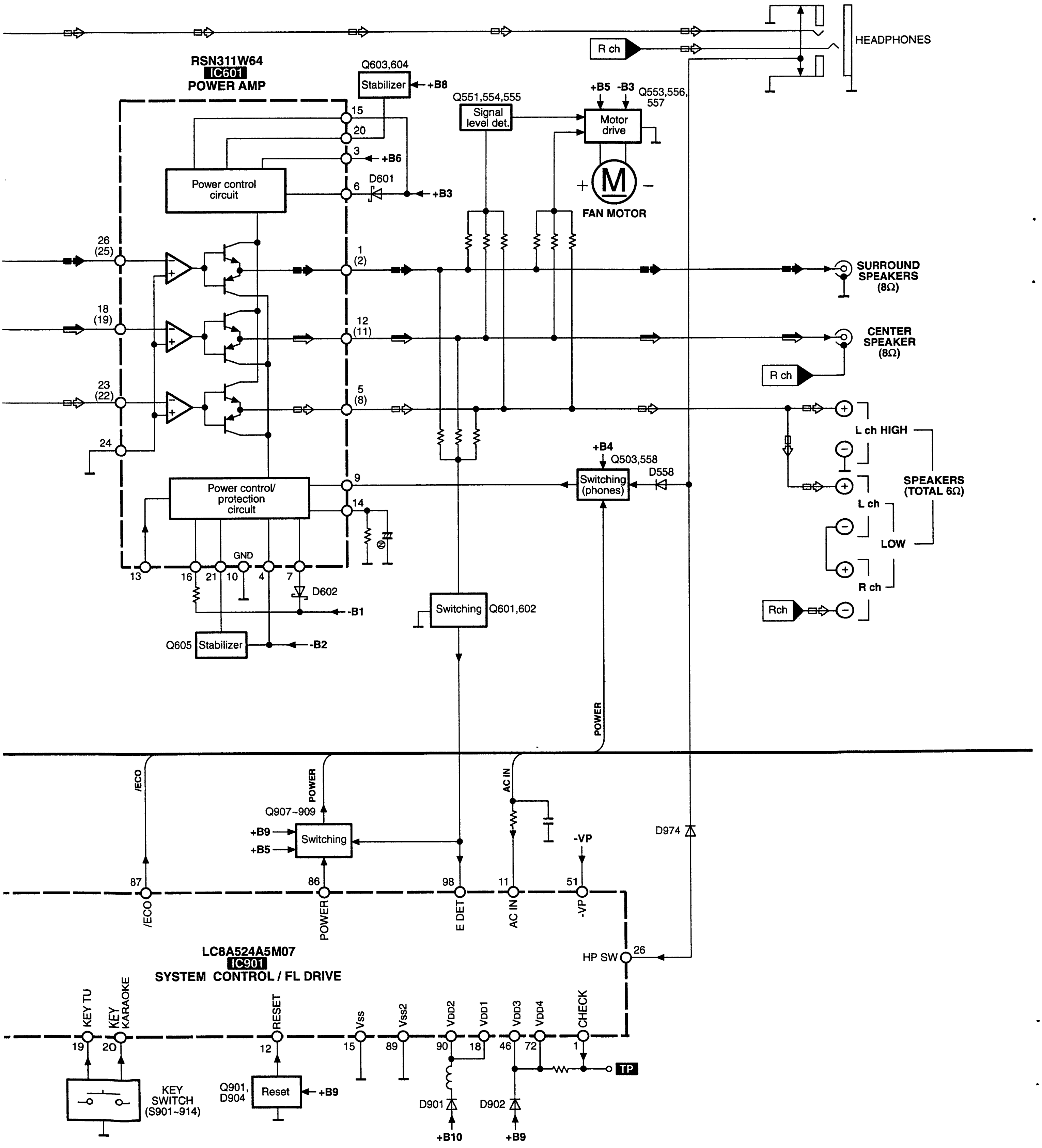
Pin No.	Terminal Name	I/O	Function
1	CHECK	O	Clock check signal output
2	LC72 DI	O	PLL data signal output for IC102
3	LC72 CE	O	Chip enable signal output for IC102
4	LC72 DO/ ST	I	IF count data/stereo detect signal input for IC 102
5	LC72 CK	O	Clock signal output for IC102
6	SW LV1	O	LEVEL 1 signal output for IC502
7	SW LV2	O	LEVEL 2 signal output for IC502
8	SW MUT	–	Muting signal output for IC502 (Not used)
9	SEL TUNER	–	Tuner select signal output (Not used, open)
10	SEL/ TUNER	O	Tuner select signal output ("L" = Tuner)
11	AC IN	I	Power failure detect signal input
12	RESET	I	Reset signal input
13	X IN	I	Oscillator connected terminal (32.7 kHz)
14	X OUT	O	
15	V_{SS}	–	GND terminal
16	XC IN	I	Oscillator connected terminal (6 MHz)
17	XC OUT	O	
18	V_{DD}1	I	Power supply terminal
19	KEY TU	I	Operation key signal input
20	KEY KARAOKE	I	Operation key signal input
21	SH REQ	I	Request signal input for sound processor
22	NC(GND)	–	Not used, connected to GND
23	VR JOGB	I	Volume control signal input
24	VR JOGA		
25	MIC DET	I	Microphone connecting detect signal input
26	HP SW	I	Headphones connecting detect signal input
27	RDS CLK	I	RDS clock signal input
28	RDS DATA	I	RDS data signal input
29	REMOCON	I	Remote control signal input
30~41	12G~1G	O	Grid signal output
42~45	P33~P30	O	Segment signal output
46	V_{DD}3	I	Power supply terminal
47~50	P29~P26	O	Segment signal output
51	–VP	I	Power supply terminal (negative)
52~71	P25~P6	O	Segment signal output
72	V_{DD}4	I	Power supply terminal
73~77	P5~P1	O	Segment signal output
78	REGIN0	I	Area select signal input
79	REGIN1	I	Area select signal input
80	STANDBY	O	LED (STAND BY) drive signal output
81	TIMER	O	LED (TIMER) drive signal output
82	S.W LED	O	LED (S.WOOFER) drive signal output
83	LOUNGE	–	LED (LOUNGE) drive signal output (Not used, open)
84	CHORUS	–	LED (CHORUS) drive signal output (Not used, open)
85	MUTE	–	Muting signal output (Not used)
86	POWER	O	Power control signal output
87	/ECO	O	ECO signal output
88	NC	–	Not used, open
89	V_{SS}2	–	GND terminal
90	V_{DD}2	I	Power supply terminal
91~93	NC	–	Not used, open
94	SH CS	O	Chip select signal output to Sound processor
95	SH DO	O	Serial communication signal to Sound processor (Data signal output)
96	SH DI	I	Serial communication signal to Sound processor (Data signal input)
97	SH CK	I	Serial communication signal to Sound processor (Clock signal input)
98	E DET	I	Unusual condition detect terminal ("L": Unusual)
99	CR TIMER	I/O	TIME CONSTANT terminal
100	SD	I	Station detector signal input for tuner circuit

■ Block Diagram


FM ANT
Z120 (FM FRONT END)
RF amp.
FM mixer
Local OSC
Buffer amp.
+B(FM)
CF201
FM IF amp.
Q101, 102
CF202
AM ANT
Z101
AM ANT coil
AM OSC coil
+B2
Rch
LA1833MN-TLM
IC101
FM/AM IF AMP, DET / AM OSC, MIX / FM MPX
Q110
Switch-ing
DET
REG
AFC
OSC
AM RF IN
AGC
AM OUT
DET OUT
PILOT IN
MPX IN
PILOT OUT
Lch
Rch
Decoder
OSC OUT
ALC
Buffer
AM OSC
AM MIX
AM RF amp.
AGC
AM IF
AM det.
Phase det.
Stereo switch
Pilot cancel
Level det.
AM/FM IF buffer
Comp.
FM IF IN
FM IF
S-curve
FM det.
Tuning Drive
VCO
FF
FF
FF
Pilot det.
Vcc
FMDET
AM MIX OUT
AM IF IN
SD
STRQ
GND
FM/AM
MONO
ST
+B2
X102 (10.6MHz)
Z102
AM IFT
SD
X103 (7.2MHz)
AOUT
AIN
PD
XIN
XOUT
Phase detector charge pump
Reference divider
IFIN
FM IN
Swallow counter 1/6,1/17 4bit
1/2
AM IN
12 bit programmable divider
LC72131MDTLM
IC102
PLL FREQUENCY SYNTHESIZER
CE
DI
CL
DO
AM
CE1
DATA1
CLK1
DATA IN
+B2
VDD
Universal counter
Data shift register latch
Power ON reset
Vss
+B(FM)
Q106
+B1
Power supply (FM:ON)
FM
MONO
LW
SDC
STRQ

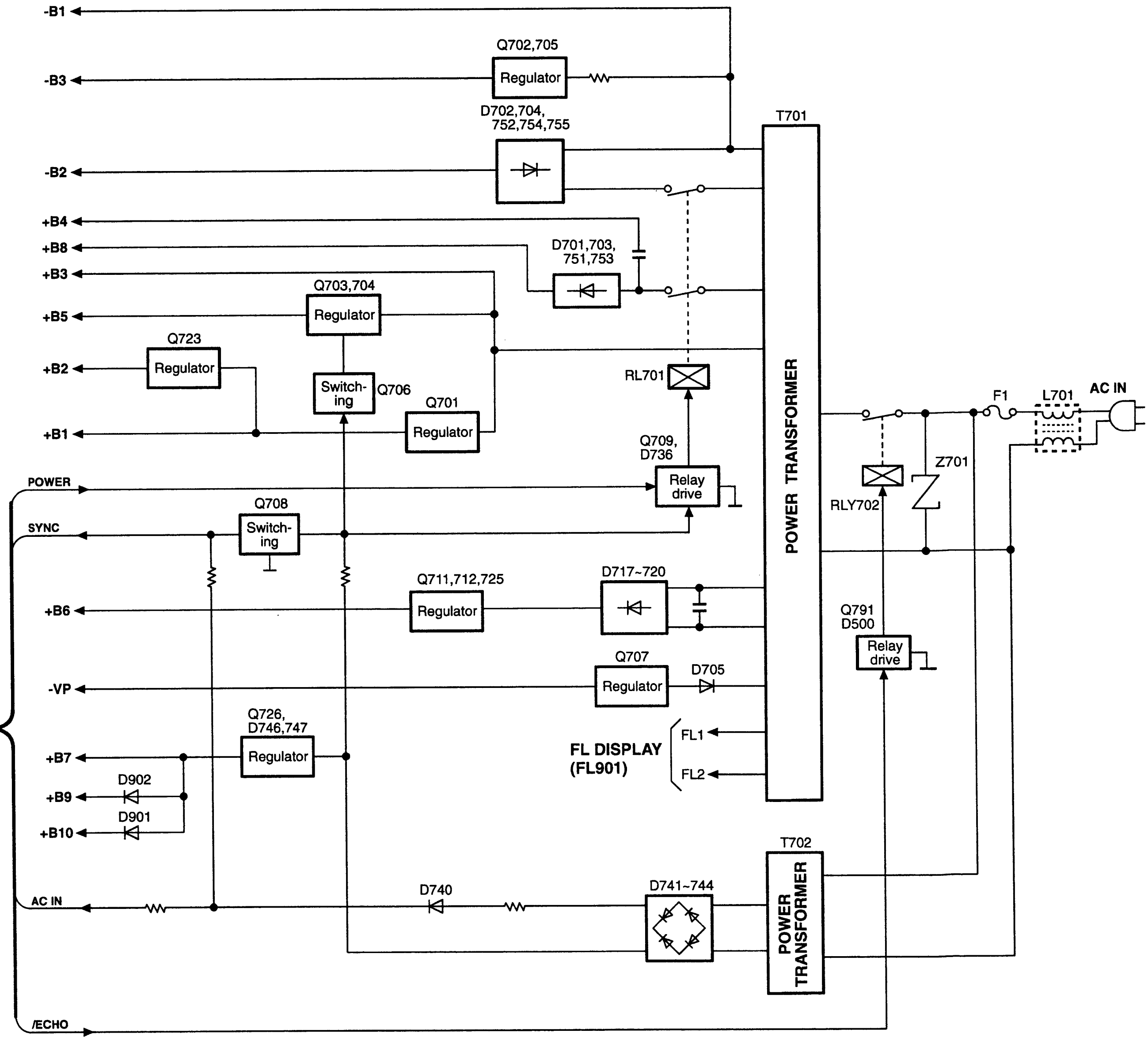

W501
TU Lch OUT
TU Rch OUT
A.GND
Lch IN
Rch IN
+B(10V)
SUR Lch IN
SUR Rch IN
CENTER IN
MIC
-B(-7.5V)
V.GND
D.GND
CE/REQ
CLK
DATA
CT.GND
SH FL1
SH FL2
SYNC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Rch
Rch
Rch
+B6
-B3
To SOUND PROCESSOR BLOCK DIAGRAM
From POWER TRANSFORMER
SYNC
96
95
97
94
21
SH DI
SH DO
SH CK
SH CS
SH REQ
LC8A524A5M07
IC901
SYSTEM CONTROL / FL DRIVE
LC72 CE
LC72 DO/ST
LC72 CK
LC72 DI
SD
3
4
5
2
100
CE1
DATA IN
CLK1
DATA1
CRT TIMER
99
D903
XC IN
XC OUT
16
17
X901
(6MHz)
X IN
X OUT
13
14
X902
(32.7kHz)


CR NETWORK
NF
R ch
R ch
NF
M62456FPE1
IC502
PRE AMP
+B5
-B3
+B2
VDD
Vss
MPX IN
VREF
FLOUT
CIN
Reference Voltage
VREF
PLL (57kHz)
Clock Recovery (1187.5Hz)
VREF
RDCL
RDDA
PCL
RDS-ID
IDR
Antialiasing Filter
57KHz BPF (SCF)
Smoothing Filter
Data Decoder
RDS-ID Detect
T1
T2
T3
T4
Test
CLK(4.332MHz)
VREF
OSC/Divider
XIN
XOUT
STDBY
X151
DET
LC72721NMTLM
IC151
RDS SIGNAL DEMODULATOR
VR901 (VOLUME)
VR JOGA
VR JOGB
SW LV1
SW LV2
RDS DATA
RDS CLK
LC8A524A5M07
IC901
SYSTEM CONTROL / FL DRIVE
REMO-CON
1~12G
P1~33
REGIN 0,1
TIMER
S.W LED
STANDBY
SEL/TUNER
Z901 REMOTE SENSOR
+B9
FL901
FL DISPLAY
42~45, 47~50 52~71, 73~77
30~41
78,79
D934,936
D954 (⏲PLAY/REC)
D951 (S.WOOFER)
D306 (⏻)
Q906
LED drive
+B9
D908 (TUNER/ BAND)


HEADPHONES
R ch
RSN311W64
IC601
POWER AMP
Q603,604
Stabilizer
+B8
15
20
3
+B6
6
D601
+B3
Power control circuit
Q551,554,555
Signal level det.
+B5
-B3
Q553,556, 557
Motor drive
M
FAN MOTOR
26 (25)
18 (19)
23 (22)
24
1 (2)
12 (11)
5 (8)
SURROUND SPEAKERS (8Ω)
CENTER SPEAKER (8Ω)
R ch
L ch HIGH
SPEAKERS (TOTAL 6Ω)
L ch
LOW
R ch
Rch
+B4
Q503,558
D558
Switching (phones)
9
14
Power control/ protection circuit
GND
13
16
21
10
4
7
D602
-B1
Q605
Stabilizer
-B2
Switching
Q601,602
POWER
/ECO
POWER
AC IN
Q907~909
+B9
+B5
Switching
D974
-VP
87
86
98
11
51
/ECO
POWER
E DET
AC IN
-VP
LC8A524A5M07
IC901
SYSTEM CONTROL / FL DRIVE
HP SW
26
KEY TU
KEY KARAOKE
RESET
Vss
Vss2
VDD2
VDD1
VDD3
VDD4
CHECK
19
20
12
15
89
90
18
46
72
1
TP
KEY SWITCH (S901~914)
Q901, D904
Reset
+B9
D901
D902
+B10
+B9

Notes

- Signal line ⇨ : FM signal ➡ : AM signal ⇨ : FM OSC signal ➡ : AM OSC signal
  ⇨ : Source signal ⇨ : Center SP. signal ➡ : Surround SP. signal ⇨ : MIC signal
- ( ) indicates pin No. Right channel.


-B1
-B3
-B2
+B4
+B8
+B3
+B5
+B2
+B1
POWER
SYNC
+B6
-VP
+B7
+B9
+B10
AC IN
/ECHO
Q702,705
Regulator
D702,704,
752,754,755
T701
D701,703,
751,753
Q703,704
Regulator
Q723
Regulator
Switch-
ing
Q706
Q701
Regulator
RL701
Q709,
D736
Relay
drive
Q708
Switch-
ing
Q711,712,725
Regulator
D717~720
Q707
Regulator
D705
Q726,
D746,747
Regulator
D902
D901
FL DISPLAY
(FL901)
FL1
FL2
POWER TRANSFORMER
F1
L701
AC IN
Z701
RLY702
Q791
D500
Relay
drive
T702
POWER
TRANSFORMER
D740
D741~744

■ Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
* ALL parts are supplied by MESA.
* The "<IA> <IB> <IC> <ID>" marks in Remarks indicate language of instruction manual.
  <IA> : German, Italian, French
  <IB> : Spanish, Swedish, Polish
  <IC> : Dutch, Danish
  <ID> : English
* The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time, The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of period, the assembly will no longer be available.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0395A-S1	CABINET	1	
2	RHD30007-S	SCREW	4	
3	XTBS3+10JFZ1	SCREW	1	
4	RGN1719-K	NAME PLATE	1	(EB)
4	RGN1718-K	NAME PLATE	1	(EG)
5	REM0057	FAN UNIT	1	
6	REX0967	WIRE ASS'Y	1	
7	XTWS3+8T	SCREW	1	
8	RMZ0339	ZNR COVER	1	
9	RGW0317-S	KNOB,VOLUME	1	
10	RHN90001	NUT	1	
11	RKA0106-N	FOOT RING	4	
12	RKF0589D-K	REAR COVER	1	
13	RKW0581-V	FL WINDOW	1	
14	RYP0915E-S	FRONT PANEL	1	
14-1	RGB0025-A	TECHNICS BADGE	1	
15	SHG1654	RUBBER	4	
16	XTB3+10JFZ	SCREW	11	
17	XTB3+8JFZ	SCREW	13	
18	XTW3+15T	SCREW	2	
19	XTBS3+8JFZ1	SCREW	2	
A1	RAK-EHA20WH	REMOTE CONT.TRANSMITTER	1	
A1-1	RKK0123-H	BATTERY COVER	1	
A2	REE0393	SPEAKER CORD	2	
A3	REE0853	SPEAKER CORD	2	
⚠ A4	RJA0053-2X	AC POWER SUPPLY CORD	1	(EB)
⚠ A4	RJA0019-X	AC POWER SUPPLY CORD	1	(EG)
⚠ A5	VFA0151-1	PLUG ADAPTOR	1	
A6	RSA0022-J	AM LOOP ANTENNA	1	
A7	RQCB0169	SERVICE CENTER LIST	1	
A8	SJP9009	DIN ADAPTOR	1	(EB)
A9	RSA0007	FM INDOOR ANTENNA	1	
A10	RJL1P019B15	PIN CORD	1	
A11	RQA0117	WARRANTY CARD	1	
A12	RQCA0570	CD SHAPE CAUTION	1	
A13	RQT5049-D	OPERATING INSTRUCTIONS	1	<IA>(EG)
A14	RQT5050-E	OPERATING INSTRUCTIONS	1	<IB>(EG)
A15	RQT5051-H	OPERATING INSTRUCTIONS	1	<IC>(EG)
A16	RQT5052-B	OPERATING INSTRUCTIONS	1	<ID>
C101	ECBT1C103NS5	16V 0.01U	1	
C102	ECEA1CKS101	16V 100U	1	
C103	ECBT1C103NS5	16V 0.01U	1	
C104,05	ECBT1H102KB5	50V 1000P	2	
C106	ECBT1C103NS5	16V 0.01U	1	
C107	ECBT1H473ZF5	50V 0.047U	1	
C108	ECBT1H8R2KC5	50V 8.2P	1	
C109	ECBT1H102KB5	50V 1000P	1	
C110	ECBT1C103NS5	16V 0.01U	1	
C111	ECEA1EKS4R7	25V 4.7U	1	
C112	ECBT1C103NS5	16V 0.01U	1	
C113	ECBT1H102KB5	50V 1000P	1	
C114	RCE1HKA3R3BG	50V 3.3U	1	
C115	ECEA1EKS4R7	25V 4.7U	1	
C116	ECFR1C333KR	16V 0.033U	1	
C117,18	ECFR1C183KR	16V 0.018U	2	
C119	ECQP1391JZ	100V 390P	1	
C120	RCE1CKA100BG	16V 10U	1	
C121	RCE1HKAR47BG	50V 0.47U	1	
C122,23	ECEA1HKS010	50V 1U	2	
C124	ECBT1H101KB5	50V 100P	1	
C125	ECEA1CKS220	16V 22U	1	
C126	ECBT1H473ZF5	50V 0.047U	1	
C127	ECEA1CKS220	16V 22U	1	
C129,30	ECEA0JKS101	6.3V 100U	2	
C131	ECBT1H101KB5	50V 100P	1	
C132	ECBT1H102KB5	50V 1000P	1	
C133,34	ECBT1H270JU5	50V 27P	2	
C136	ECBT1H102KB5	50V 1000P	1	
C137	ECFR1E472KR	25V 4700P	1	
C138	ECBT1C103KS5	16V 0.01U	1	
C139	ECFR1E472KR	25V 4700P	1	
C141,42	ECEA1HKS010	50V 1U	2	
C143,44	ECBT1C472KR5	16V 4700P	2	
C147	ECBT1H102KB5	50V 1000P	1	
C148	ECBT1C103NS5	16V 0.01U	1	
C149	ECBT1H104ZF5	50V 0.1U	1	
C151	RCE1CKA100BG	16V 10U	1	
C152	ECBT1H331KB5	50V 330P	1	
C153	ECBT1H102KB5	50V 1000P	1	
C154	ECBT1H561KB5	50V 560P	1	
C155	ECBT1H102KB5	50V 1000P	1	
C156,57	ECBT1H470J5	50V 47P	2	
C158,59	ECEA0JKS470	6.3V 47U	2	
C160	ECBT1H102KB5	50V 1000P	1	
C371	ECEA0JKS101	6.3V 100U	1	
C395,96	ECBT1H473ZF5	50V 0.047U	2	
C509,10	ECBT1E103ZF	25V 0.01U	2	
C521	ECQV1H473JM3	50V 0.047U	1	
C522	ECQV1H683JZ3	50V 0.068U	1	
C523,24	ECBT1H101KB5	50V 100P	2	
C525	ECQV1H563JM3	50V 0.056U	1	
C526	ECQV1H683JZ3	50V 0.068U	1	
C527,28	ECBT1H101KB5	50V 100P	2	
C529,30	RCE1CKA100BG	16V 10U	2	
C531	ECQV1H823JZ	50V 0.082U	1	
C532	ECBT1E103ZF	25V 0.01U	1	
C533	ECEA1EKS4R7	25V 4.7U	1	
C534	RCE1AKA330BG	10V 33U	1	
C535	ECQV1H683JZ3	50V 0.068U	1	
C536	ECQV1H393JM3	50V 0.039U	1	
C537	ECBT1H104KB5	50V 0.1U	1	
C538	ECQV1H154JM3	50V 0.15U	1	
C539	ECBT1C472KR5	16V 4700P	1	
C540,41	ECEA0JKS470	6.3V 47U	2	
C542	ECBT1E103ZF	25V 0.01U	1	
C550	ECBT1C103NS5	16V 0.01U	1	
C551	ECEA1HKS2R2	50V 2.2U	1	
C552	ECBT1E103ZF	25V 0.01U	1	
C554	ECEA1AKS221	10V 220U	1	
C555,56	ECEA1CKN100B	16V 10U	2	
C559	ECBT1C103NS5	16V 0.01U	1	
C561,62	ECQV1H823JZ	50V 0.082U	2	
C563	ECEA0JKS101	6.3V 100U	1	
C564	RCE1CKA100BG	16V 10U	1	
C601,02	RCE1CKA100BG	16V 10U	2	
C603,04	ECBT1H471KB5	50V 470P	2	
C605,06	ECBT1H102KB5	50V 1000P	2	
C607,08	ECBT1H471KB5	50V 470P	2	
C609,10	ECBT1H220JC5	50V 22P	2	
C611,12	ECBT1H150JC5	50V 15P	2	
C613,14	ECBT1H220JC5	50V 22P	2	
C615	ECKR1H103ZF5	50V 0.01U	1	
C616	ECEA1HKNR47B	50V 0.47U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C617,18	ECKR2H103ZU	500V 0.01U	2	
C619	ECBT1E103ZF	25V 0.01U	1	
C620,21	ECQV1H473JM3	50V 0.047U	2	
C622	ECA1HM101	50V 100U	1	
C623	ECBT1H104ZF5	50V 0.1U	1	
C624-27	ECQV1H473JM3	50V 0.047U	4	
C628	ECBT1H104ZF5	50V 0.1U	1	
C629	RCE1CKA100BG	16V 10U	1	
C631,32	ECBT1H473ZF5	50V 0.047U	2	
C633,34	ECBT1H102KB5	50V 1000P	2	
C635,36	ECBT1H473ZF5	50V 0.047U	2	
C637-44	ECBT1H102KB5	50V 1000P	8	
C645,46	ECBT1H473ZF5	50V 0.047U	2	
C647-50	ECBT1H102KB5	50V 1000P	4	
C651	ECBT1H473ZF5	50V 0.047U	1	
C652-54	ECBT1H102KB5	50V 1000P	3	
⚠ C701-04	ECA1VM472E	35V 4700U	4	
C706	RCE1VKA100BG	35V 10U	1	
C707	ECBT1E103ZF	25V 0.01U	1	
C709	ECBT1H104ZF5	50V 0.1U	1	
C710	ECBT1E103ZF	25V 0.01U	1	
C714	ECBT1H102KB5	50V 1000P	1	
⚠ C715	ECA1EM682	25V 6800U	1	
C717	ECEA1CKS330	16V 33U	1	
C718	ECA1CM101	16V 100U	1	
C719	ECBT1E103ZF	25V 0.01U	1	
C720	ECBT1H473KB5	50V 0.047U	1	
C721,22	RCE1AKA101BG	10V 100U	2	
C723	ECBT1H473KB5	50V 0.047U	1	
C731	ECBT1H102KB5	50V 1000P	1	
C732	ECBT1E223ZF	25V 0.022U	1	
C733	ECBT1E103ZF	25V 0.01U	1	
C734	RCE1HKA3R3BG	50V 3.3U	1	
⚠ C737	ECA1HM101	50V 100U	1	
C740	RCE1CKA100BG	16V 10U	1	
C741	ECQE1104KF3	100V 0.1U	1	
C753	ECKR1H103ZF5	50V 0.01U	1	
⚠ C754	RCE1CM102BV	16V 1000U	1	
C758	ECBT1E103ZF	25V 0.01U	1	
C759	RCE1AKA470BG	10V 47U	1	
C761	ECQE1104KF3	100V 0.1U	1	
⚠ C791	ECKWRS102MBC	125V 1000P	1	
C901	ECBT1H102KB5	50V 1000P	1	
C902	RCE1AM102BV	10V 1000U	1	
C903,04	ECBT1E103ZF	25V 0.01U	2	
C907,08	ECBT1H471KB5	50V 470P	2	
C909	ECBT1H102KB5	50V 1000P	1	
C910	ECBT1H200JC5	50V 20P	1	
C911	ECBT1H180J5	50V 18P	1	
C912	ECBT1H104ZF5	50V 0.1U	1	
C913	RCE1CKA100BG	16V 10U	1	
C914	ECEA1HKS2R2	50V 2.2U	1	
C915	ECBT1E103ZF	25V 0.01U	1	
C916	EEAFC0J101B	6.3V 100U	1	
C917	ECBT1E103ZF	25V 0.01U	1	
C918	ECEA0JKS101	6.3V 100U	1	
C919,20	RCE1HKA4R7BG	50V 4.7U	2	
C921	ECBT1H102KB5	50V 1000P	1	
C922	ECEA1VKA330B	35V 33U	1	
C923-25	ECBT1H104ZF5	50V 0.1U	3	
C926	ECBT1H102KB5	50V 1000P	1	
C927,28	RCE1HKA4R7BG	50V 4.7U	2	
CF201	RLFFETNGD01L	CERAMIC FILTER	1	
CF202	RLFFETMGD01L	CERAMIC FILTER	1	
CN101B	RJU100W07	CONNECTOR(7P)	1	
CN102B	RJU100W07	CONNECTOR(7P)	1	
CN601	RJU057W012	CONNECTOR(12P)	1	
CN701-13	RJS1A1101T1	CONNECTOR(1P)	13	
CN781	RJS10T5ZA	CONNECTOR(10P)	1	
CP101B	RJT100W07	CONNECTOR(7P)	1	
CP102B	RJT100W07	CONNECTOR(7P)	1	
CP601	RJT057W012-1	CONNECTOR(12P)	1	
⚠ D101	MA4051M	DIODE	1	
⚠ D151	MA4051M	DIODE	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D306	LNJ801TPSJAD	LED	1	
D500-04	MA165	DIODE	5	
D551,52	MA165	DIODE	2	
D553	MA700TA	DIODE	1	
D554	MA165	DIODE	1	
D555	MA4100M	DIODE	1	
D558	MA165	DIODE	1	
D559,60	MA4020LTA	DIODE	2	
D562,63	MA165	DIODE	2	
D601,02	SB360L6508	DIODE	2	
D603	MA4180L	DIODE	1	
D604,05	MA4140M	DIODE	2	
D607	1SS291TA	DIODE	1	
D657,58	MA165	DIODE	2	
⚠ D701-04	1N5402BF	DIODE	4	
⚠ D705	RL1N4003N02	DIODE	1	
D711	RL1N4003N02	DIODE	1	
D715	MA165	DIODE	1	
⚠ D717-20	RL1N4003N02	DIODE	4	
⚠ D721	MA4270M	DIODE	1	
⚠ D723	MA4150M	DIODE	1	
⚠ D725	MA4082LTA	DIODE	1	
⚠ D726,27	RL1N4003N02	DIODE	2	
D730	MA4091H	DIODE	1	
D736	MA165	DIODE	1	
⚠ D737	MA4082LTA	DIODE	1	
D738-40	MA165	DIODE	3	
⚠ D741-44	RL1N4003N02	DIODE	4	
D745	MA4051M	DIODE	1	
D746	RL1N4003N02	DIODE	1	
⚠ D747	MA4068M	DIODE	1	
D749	MA165	DIODE	1	
⚠ D751,52	1N5402BF	DIODE	2	
⚠ D753-55	RL1N4003N02	DIODE	3	
D756,57	MA700TA	DIODE	2	
D758	MA165	DIODE	1	
D901,02	1SS291TA	DIODE	2	
D903,04	MA165	DIODE	2	
D905	1SS291TA	DIODE	1	
D908	LNJ301MPUJAD	LED	1	
D915	1SS291TA	DIODE	1	
D933	MA165	DIODE	1	
D935,36	MA165	DIODE	2	
D951	LNJ301MPUJAD	LED	1	
D954	LNJ401NPYJA	LED	1	
D974	MA165	DIODE	1	
⚠ F1	XBA2C20TB0	FUSE,T2A	1	
FL901	RSL0287-F	FL	1	
IC101	LA1833MN-TLM	IC	1	
IC102	LC72131MDTLM	IC	1	
IC151	LC72721NMTLM	IC	1	
IC502	M62456FPE1	IC	1	
⚠ IC601	RSN311W64-P	IC	1	
IC901	LC8A524A5M07	IC	1	
JK101	RJH5210M	JACK,ANTENNA	1	
JK551	SJT3213	JACK,CONNECTOR,FAN MOTOR	1	
JK601	RJR0054B	JACK,SPEAKER	1	
JK602	RJR0054C	JACK,SPEAKER	1	
JK603	RJH2308	JACK,SURROUND,CENTER	1	
⚠ JK701	SJS9236	JACK,AC INLET	1	
JK903	RJJ37TN02-C	JACK,HEADPHONE	1	
L101,02	ELESNR68MA	COIL	2	
L103	ELEXTR47MA9	COIL	1	
L151,52	ELEXT101KA9	COIL	2	
L153	RLQZP1R0KT-Y	COIL	1	
L601-06	RLQYR73MW1-0	COIL	6	
⚠ L701	RLQZ371	COIL	1	
L901	RLQA100JT-Y	COIL	1	
L902	RLQZP1R0KT-Y	COIL	1	
P1	RPG4396	PACKING CASE(SA)	1	
P1	RPG4397	PACKING CASE(RS)	1	
P1	RPG4398	PACKING CASE(SH)	1	

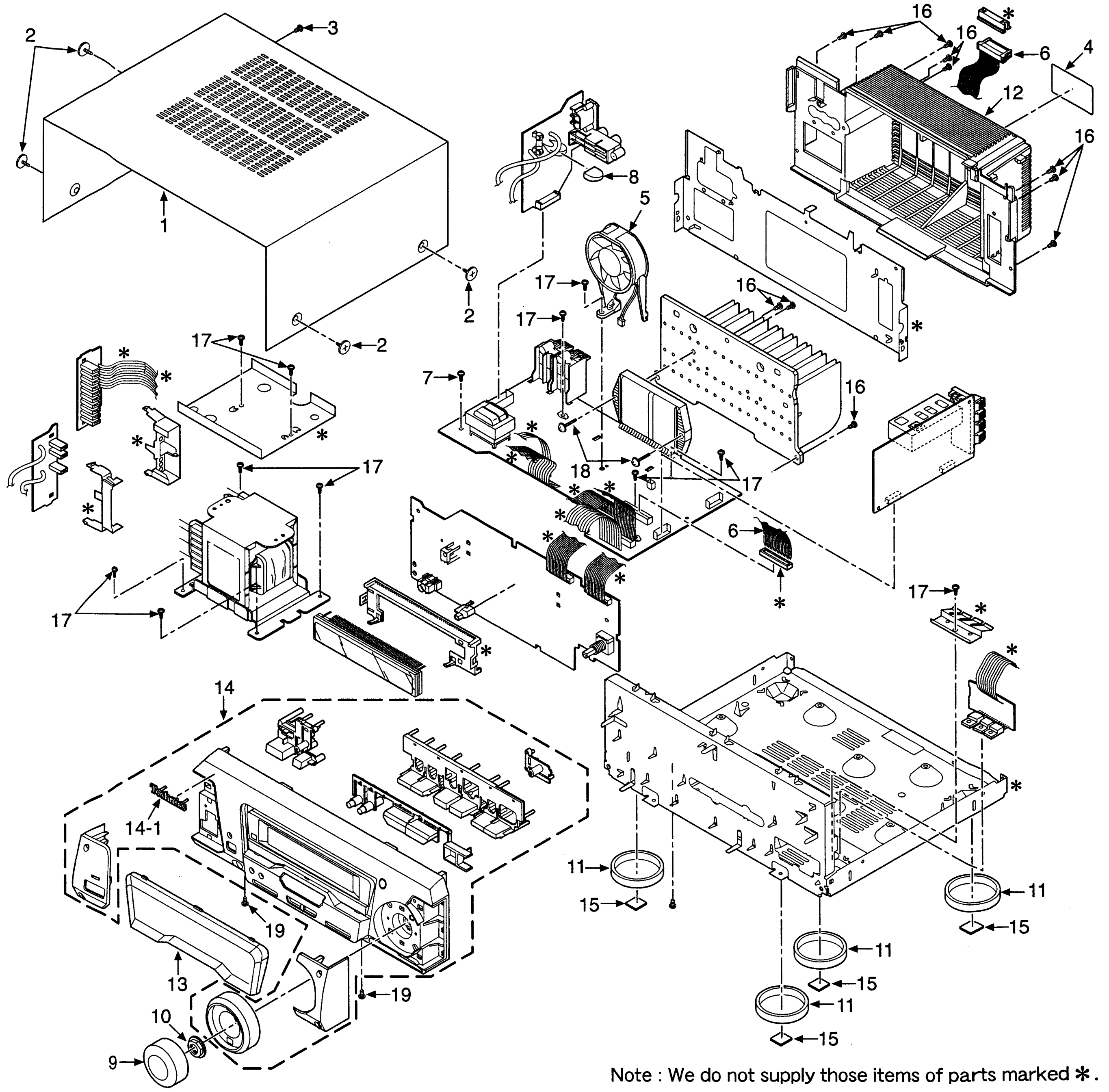
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
P1	RPG4399	PACKING CASE(SL)	1	
P2	RPN1194	PAD(SA)	1	
P2	RPN1195	PAD(RS)	1	
P2	RPN1196	PAD(SH)	1	
P2	RPN1197	PAD(SL)	1	
P3	RPF0139	PROTECTION COVER	1	
P4	RPG4494	PACKING CASE(SYSTEM)	1	(EB)
P4	RPG4493	PACKING CASE(SYSTEM)	1	(EG)
P5	RPQ0951	PAD(SYSTEM)	1	
P6	SPP740-1	SHEET	1	
PCB1	REP2592C-T	TUNER PCB	1	(RTL)
PCB2	REP2859C-M	MAIN PCB	1	(EB)(RTL)
PCB2	REP2859B-M	MAIN PCB	1	(EG)(RTL)
Q101,02	2SC2787FK	TRANSISTOR	2	
Q106	UN4111	TRANSISTOR	1	
Q110	2SC3311AR	TRANSISTOR	1	
Q503	2SC3327A	TRANSISTOR	1	
Q551	2SA1995RSTA	TRANSISTOR	1	
Q553	2SC3327A	TRANSISTOR	1	
Q554	2SA1995RSTA	TRANSISTOR	1	
Q555	2SC3327A	TRANSISTOR	1	
Q556	2SC5398RSTA	TRANSISTOR	1	
Q557	2SA1995RSTA	TRANSISTOR	1	
Q558	UN4211	TRANSISTOR	1	
Q601,02	2SC5398RSTA	TRANSISTOR	2	
Q603,04	2SD1859QRTV2	TRANSISTOR	2	
Q605	2SB1417PQTA	TRANSISTOR	1	
⚠ Q701	2SD2374PQAU	TRANSISTOR	1	
⚠ Q702	2SB1548PQAU	TRANSISTOR	1	
⚠ Q703,04	2SD2137PQTA	TRANSISTOR	2	
⚠ Q705	2SA1995RSTA	TRANSISTOR	1	
Q706	UN4211	TRANSISTOR	1	
⚠ Q707	2SB621A-R	TRANSISTOR	1	
Q708	UN4211	TRANSISTOR	1	
Q709	2SC3327A	TRANSISTOR	1	
⚠ Q711,12	2SB1548PQAU	TRANSISTOR	2	
⚠ Q723	2SC3940AQSTA	TRANSISTOR	1	
⚠ Q725	2SC5398RSTA	TRANSISTOR	1	
⚠ Q726	2SC3940AQSTA	TRANSISTOR	1	
Q791	2SC3327A	TRANSISTOR	1	
Q901	UN4212TA	TRANSISTOR	1	
Q906	UN4111	TRANSISTOR	1	
R102	ERDS2FJ472	1/4W 4.7K	1	
R103	ERDS2FJ101	1/4W 100	1	
R104	ERDS2FJ103	1/4W 10K	1	
R105	ERDS2FJ471	1/4W 470	1	
R106	ERDS2FJ474	1/4W 470K	1	
R107	ERDS2FJ331	1/4W 330	1	
R108	ERDS2FJ474	1/4W 470K	1	
R109	ERDS2FJ331	1/4W 330	1	
R110	ERDS2FJ102	1/4W 1K	1	
R111	ERDS2FJ391	1/4W 390	1	
R112	ERDS2FJ104	1/4W 100K	1	
R113	ERDS2FJ103	1/4W 10K	1	
R114	ERDS2FJ562	1/4W 5.6K	1	
R115	ERDS2FJ561	1/4W 560	1	
R116	ERDS2FJ102	1/4W 1K	1	
R117	ERDS2FJ683	1/4W 68K	1	
R118	ERDS2FJ332	1/4W 3.3K	1	
R119	ERDS2FJ103	1/4W 10K	1	
R120	ERDS2FJ473	1/4W 47K	1	
R121	ERDS2FJ223	1/4W 22K	1	
R122	ERDS2FJ272	1/4W 2.7K	1	
R123	ERDS2FJ683	1/4W 68K	1	
R124	ERDS2FJ271	1/4W 270	1	
R125	ERDS2FJ471	1/4W 470	1	
R126	ERDS2FJ152	1/4W 1.5K	1	
R127	ERDS2FJ471	1/4W 470	1	
R128	ERDS2FJ820	1/4W 82	1	
R129	ERDS2FJ273	1/4W 27K	1	
R130	ERDS2FJ103	1/4W 10K	1	
R131	ERDS2FJ680	1/4W 68	1	
R132	ERDS2FJ103	1/4W 10K	1	
R133	ERDS2FJ102	1/4W 1K	1	
R134	ERDS2FJ471	1/4W 470	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R135-37	ERDS2FJ102	1/4W 1K	3	
R138	ERDS2FJ332	1/4W 3.3K	1	
R139	ERDS2FJ332	1/4W 3.3K	1	
R140	ERDS2FJ472	1/4W 4.7K	1	
R141,42	ERDS2FJ102	1/4W 1K	2	
R143	ERDS2FJ223	1/4W 22K	1	
R145,46	ERDS2FJ104	1/4W 100K	2	
R151,52	ERDS2FJ102	1/4W 1K	2	
R153,54	ERDS2FJ104	1/4W 100K	2	
R155	ERDS2FJ121	1/4W 120	1	
R158	ERDS2FJ102	1/4W 1K	1	
R229,30	ERDS2FJ102	1/4W 1K	2	
R289,90	ERDS2FJ563	1/4W 56K	2	
R509-12	ERDS2FJ470	1/4W 47	4	
R521	ERDS2FJ433	1/4W 43K	1	
R522	ERDS2FJ333	1/4W 33K	1	
R523,24	ERDS2FJ153	1/4W 15K	2	
R525,26	ERDS2FJ333	1/4W 33K	2	
R527,28	ERDS2FJ101	1/4W 100	2	
R529	ERDS2FJ223	1/4W 22K	1	
R530	ERDS2FJ273	1/4W 27K	1	
R531	ERDS2FJ274	1/4W 270K	1	
R532	ERDS2FJ153	1/4W 15K	1	
R533	ERDS2FJ822	1/4W 8.2K	1	
R534,35	ERDS2FJ823	1/4W 82K	2	
R538	ERDS2FJ273	1/4W 27K	1	
R539	ERDS2FJ824	1/4W 820K	1	
R542,43	ERDS2FJ472	1/4W 4.7K	2	
R544	ERDS2FJ103	1/4W 10K	1	
R545	ERDS2FJ222	1/4W 2.2K	1	
R551	ERDS2FJ183	1/4W 18K	1	
R552	ERDS2FJ473	1/4W 47K	1	
R555	ERDS2FJ223	1/4W 22K	1	
R556	ERDS2FJ104	1/4W 100K	1	
R557	ERDS2FJ103	1/4W 10K	1	
R558	ERDS2FJ102	1/4W 1K	1	
R559	ERDS2FJ472	1/4W 4.7K	1	
R560,61	ERDS2FJ104	1/4W 100K	2	
R563,64	ERDS2FJ272	1/4W 2.7K	2	
R566	ERDS2FJ683	1/4W 68K	1	
R567	ERG1SJ220	1W 22	1	
R568	ERDS2FJ101	1/4W 100	1	
R569	ERDS2FJ103	1/4W 10K	1	
R570	ERDS2TJ225	1/4W 2.2M	1	
R571	ERDS2FJ562	1/4W 5.6K	1	
R572	ERDS2FJ153	1/4W 15K	1	
R591	ERDS2FJ472	1/4W 4.7K	1	
R597,98	ERDS2FJ102	1/4W 1K	2	
R601-06	ERDS2FJ472	1/4W 4.7K	6	
R607-12	ERDS2FJ563	1/4W 56K	6	
R613	ERDS2FJ103	1/4W 10K	1	
R614,15	ERDS2FJ472	1/4W 4.7K	2	
R616	ERDS2FJ563	1/4W 56K	1	
R617,18	ERDS2FJ472	1/4W 4.7K	2	
R619,20	ERDS2FJ124	1/4W 120K	2	
R621	ERDS2FJ154	1/4W 150K	1	
R622,23	ERDS2FJ124	1/4W 120K	2	
R624	ERDS2FJ154	1/4W 150K	1	
⚠ R625,26	ERDS1FJ272	1/2W 2.7K	2	
R627	ERDS2FJ474	1/4W 470K	1	
R628	ERDS2FJ223	1/4W 22K	1	
⚠ R629	ERDS1FJ561	1/2W 560	1	
R637	ERDS2FJ153	1/4W 15K	1	
R638	ERDS2FJ683	1/4W 68K	1	
⚠ R639,40	ERDS1FJ100	1/2W 10	2	
⚠ R641,42	ERD2FCG100	1/4W 10	2	
R643,44	ERDS1FJ100	1/2W 10	2	
⚠ R645,46	ERD2FCG100	1/4W 10	2	
⚠ R647,48	ERDS2FJ2R2	1/4W 2.2	2	
⚠ R649,50	ERDS1FJ100	1/2W 10	2	
⚠ R651,52	ERD2FCG100	1/4W 10	2	
R653	ER0S2TKF5362	1/4W 53.6K	1	
R654	ERDS2FJ272	1/4W 2.7K	1	
R655	ER0S2TKG5622	1/4W 56.2K	1	
R656	ERDS2FJ331	1/4W 330	1	
R661	ERDS2FJ272	1/4W 2.7K	1	
R662	ERDS2FJ473	1/4W 47K	1	
R703-05	ERG1SJ272E	1W 2.7K	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ R707	ERD2FCJ4R7	1/4W 4.7	1	
R708	ERDS2FJ472	1/4W 4.7K	1	
R712	ERDS2FJ222	1/4W 2.2K	1	
R719	ERDS2FJ332	1/4W 3.3K	1	
R720	ERDS2FJ272	1/4W 2.7K	1	
⚠ R721	ERD2FCJ4R7	1/4W 4.7	1	
⚠ R722	ERQ16NKW2R2E	1/6W 2.2	1	
R723	ERDS2FJ562	1/4W 5.6K	1	
R724	ERDS2FJ392	1/4W 3.9K	1	
R725	ERDS2FJ100	1/4W 10	1	
R727	ERDS2FJ392	1/4W 3.9K	1	
R729	ERDS2FJ221	1/4W 220	1	
R738	ERDS2FJ392	1/4W 3.9K	1	
R739	ERDS2FJ473	1/4W 47K	1	
R749	ERDS2FJ102	1/4W 1K	1	
⚠ R753,54	ERX1SJR47	1W 0.47	2	
R761	ERG1SJ221	1W 220	1	
R763	ERDS2FJ472	1/4W 4.7K	1	
R764	ERDS2FJ331	1/4W 330	1	
⚠ R765	ERDS1FJ221	1/2W 220	1	
⚠ R766	ERDS1FJ470	1/2W 47	1	
⚠ R767	ERDS2FJ4R7	1/4W 4.7	1	
R768	ERDS2FJ101	1/4W 100	1	
R771	ERDS2FJ222	1/4W 2.2K	1	
R772	ERDS2FJ223	1/4W 22K	1	
⚠ R773	ERDS1FJ470	1/2W 47	1	
⚠ R774	ERDS1FJ270	1/2W 27	1	
R776	ERDS2FJ103	1/4W 10K	1	
R777	ERDS2FJ102	1/4W 1K	1	
⚠ R779	ERDS1FJ470	1/2W 47	1	
⚠ R791,92	RSFMB50KT-L	FUSE PROTECTOR	2	
R793	ERDS2FJ1R0	1/4W 1	1	
R794	ERDS2FJ473	1/4W 47K	1	
R795	ERDS2FJ392	1/4W 3.9K	1	
R796,97	ERDS2FJ2R2	1/4W 2.2	2	
⚠ R798,99	ERX1SJ6R8	1W 6.8	2	
R901	ERDS2FJ821	1/4W 820	1	
R902	ERDS2FJ102	1/4W 1K	1	
R903	ERDS2FJ122	1/4W 1.2K	1	
R904	ERDS2FJ152	1/4W 1.5K	1	
R905	ERDS2FJ182	1/4W 1.8K	1	
R906	ERDS2FJ222	1/4W 2.2K	1	
R907	ERDS2FJ332	1/4W 3.3K	1	
R908	ERDS2FJ472	1/4W 4.7K	1	
R909	ERDS2FJ182	1/4W 1.8K	1	
R910	ERDS2FJ222	1/4W 2.2K	1	
R911	ERDS2FJ332	1/4W 3.3K	1	
R912	ERDS2FJ472	1/4W 4.7K	1	
R913	ERDS2FJ821	1/4W 820	1	
R914	ERDS2FJ102	1/4W 1K	1	
R915	ERDS2FJ122	1/4W 1.2K	1	
R916	ERDS2FJ152	1/4W 1.5K	1	
R918	ERDS2FJ103	1/4W 10K	1	
R919	ERDS2FJ153	1/4W 15K	1	
R921,22	ERDS2FJ103	1/4W 10K	2	
R923	ERDS2FJ223	1/4W 22K	1	
R924,25	ERDS2FJ102	1/4W 1K	2	
R926	ERDS2FJ222	1/4W 2.2K	1	
R928	ERDS2FJ473	1/4W 47K	1	
R929,30	ERDS2FJ102	1/4W 1K	2	
R931,32	ERDS2FJ102	1/4W 1K	2	
R933	ERDS2FJ471	1/4W 470	1	
R934-36	ERDS2FJ101	1/4W 100	3	
R937	ERDS2FJ103	1/4W 10K	1	
R939	ERDS2FJ331	1/4W 330	1	
R940	ERDS2FJ102	1/4W 1K	1	
R943	ERDS2FJ101	1/4W 100	1	
R944	ERDS2FJ223	1/4W 22K	1	
R945	ERDS2FJ101	1/4W 100	1	
R946	ERDS2FJ102	1/4W 1K	1	
R949	ERDS2FJ472	1/4W 4.7K	1	
R950	ERDS2FJ101	1/4W 100	1	
R951	ERDS2FJ334	1/4W 330K	1	
R952	ERDS2TJ106T	1/4W 10M	1	
R953	ERDS2FJ101	1/4W 100	1	
R954	ERDS2FJ104	1/4W 100K	1	
R955	ERDS2FJ824	1/4W 820K	1	
R956-58	ERDS2FJ102	1/4W 1K	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R959	ERDS2FJ470	1/4W 47	1	
R960	ERDS2FJ152	1/4W 1.5K	1	
R961,62	ERDS2FJ223	1/4W 22K	2	
R974	ERDS2FJ271	1/4W 270	1	
R975	ERDS2FJ680	1/4W 68	1	
R981,82	ERDS2FJ391	1/4W 390	2	
R983-85	ERDS2FJ471	1/4W 470	3	
R986	ERDS2FJ221	1/4W 220	1	
R987,88	ERDS2FJ102	1/4W 1K	2	
R990	ERDS2FJ104	1/4W 100K	1	
R991	ERDS2FJ473	1/4W 47K	1	
R993	ERDS2FJ104	1/4W 100K	1	
R995	ERDS2FJ221	1/4W 220	1	
R996,97	ERDS2FJ151	1/4W 150	2	
⚠ RL701	RSY0030M-0	RELAY	1	
⚠ RL702	RSY0040M-0	RELAY	1	
S901-08	EVQ11G05R	SW,PUSH	8	
S910-15	EVQ11G05R	SW,PUSH	6	
⚠ T701	RTP2N5B013	POWER TRANSFORMER	1	
⚠ T702	RTP1I3E001	POWER TRANSFORMER	1	
VR901	EVQVBXFK124B	V.R.	1	
X102	RLFDFT13DD	OSCILLATOR	1	
X103	RSXC7M20S05T	OSCILLATOR	1	
X151	RSXC4M33S02T	OSCILLATOR	1	
X901	EF0EC6004T4	OSCILLATOR	1	
X902	RSXD32K7S02	OSCILLATOR	1	
Z101	RLA2Z006M-T	ANT COIL BLOCK	1	
Z102	RLI2Z022M-T	IF COIL BLOCK	1	
Z120	RAL0035	FM FRONT END	1	
⚠ Z701	ERZV10V511CS	COMPONENT COMBINATION	1	
Z901	RCDGP1U28XD	REMOTE SENSOR	1	

■ Cabinet Parts Location

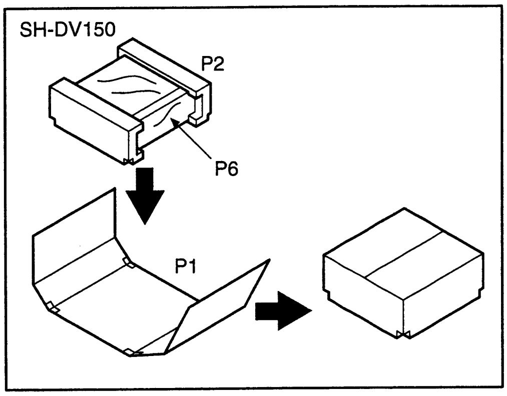


Note : We do not supply those items of parts marked ＊.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0395A-S1	CABINET	1	
2	RHD30007-S	SCREW	4	
3	XTBS3+10JFZ1	SCREW	1	
4	RGN1719-K	NAME PLATE	1	(EB)
4	RGN1718-K	NAME PLATE	1	(EG)
5	REM0057	FAN UNIT	1	
6	REX0967	WIRE ASS'Y	1	
7	XTWS3+8T	SCREW	1	
8	RMZ0339	ZNR COVER	1	
9	RGW0317-S	KNOB,VOLUME	1	
10	RHN90001	NUT	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
11	RKA0106-N	FOOT RING	4	
12	RKF0589D-K	REAR COVER	1	
13	RKW0581-V	FL WINDOW	1	
14	RYP0915E-S	FRONT PANEL	1	
14-1	RGB0025-A	TECHNICS BADGE	1	
15	SHG1654	RUBBER	4	
16	XTB3+10JFZ	SCREW	11	
17	XTB3+8JFZ	SCREW	13	
18	XTW3+15T	SCREW	2	
19	XTBS3+8JFZ1	SCREW	2	

■ Packaging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P6
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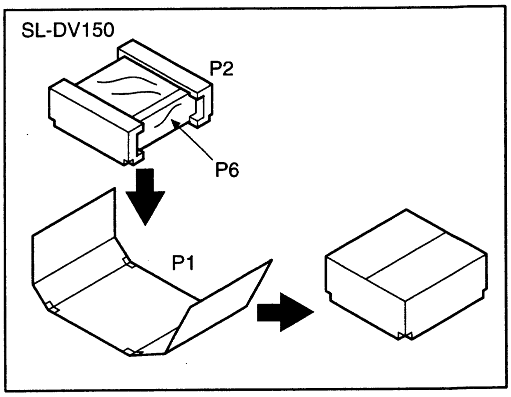
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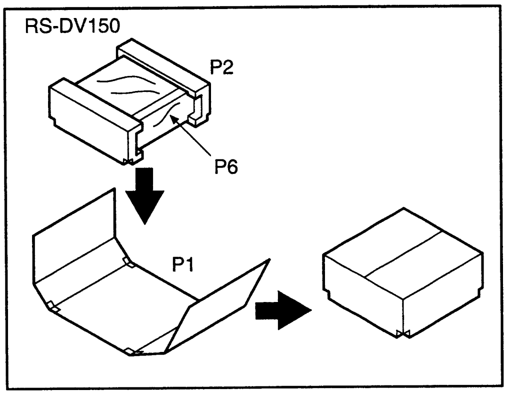
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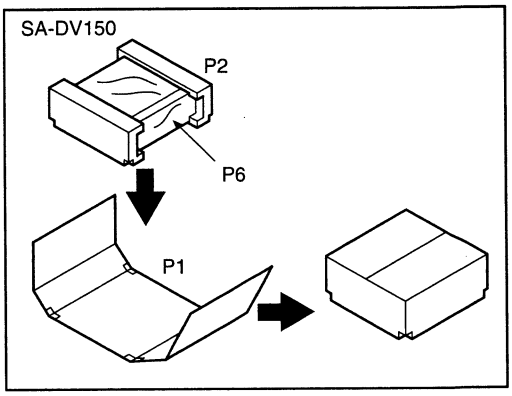
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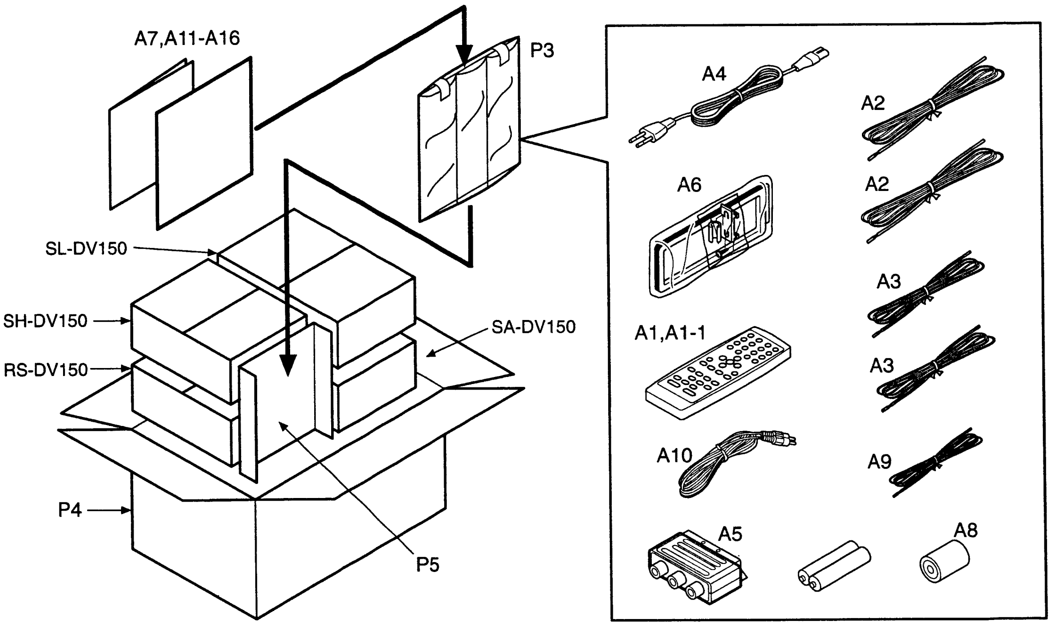
A7,A11-A16
P3
SL-DV150
SH-DV150
RS-DV150
SA-DV150
P4
P5
A4
A2
A6
A2
A3
A1,A1-1
A3
A10
A9
A5
A8

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
A1	RAK-EHA20WH	REMOTE CONT.TRANSMITTER	1	
A1-1	RKK0123-H	BATTERY COVER	1	
A2	REE0393	SPEAKER CORD	2	
A3	REE0853	SPEAKER CORD	2	
⚠ A4	RJA0053-2X	AC POWER SUPPLY CORD	1	(EB)
⚠ A4	RJA0019-X	AC POWER SUPPLY CORD	1	(EG)
⚠ A5	VFA0151-1	PLUG ADAPTOR	1	
A6	RSA0022-J	AM LOOP ANTENNA	1	
A7	RQCB0169	SERVICE CENTER LIST	1	
A8	SJP9009	DIN ADAPTOR	1	(EB)
A9	RSA0007	FM INDOOR ANTENNA	1	
A10	RJL1P019B15	PIN CORD	1	
A11	RQA0117	WARRANTY CARD	1	
A12	RQCA0570	CD SHAPE CAUTION	1	
A13	RQT5049-D	OPERATING INSTRUCTIONS	1	<IA>(EG)
A14	RQT5050-E	OPERATING INSTRUCTIONS	1	<IB>(EG)
A15	RQT5051-H	OPERATING INSTRUCTIONS	1	<IC>(EG)
A16	RQT5052-B	OPERATING INSTRUCTIONS	1	<ID>
P1	RPG4396	PACKING CASE(SA)	1	
P1	RPG4397	PACKING CASE(RS)	1	
P1	RPG4398	PACKING CASE(SH)	1	
P1	RPG4399	PACKING CASE(SL)	1	
P2	RPN1194	PAD(SA)	1	
P2	RPN1195	PAD(RS)	1	
P2	RPN1196	PAD(SH)	1	
P2	RPN1197	PAD(SL)	1	
P3	RPF0139	PROTECTION COVER	1	
P4	RPG4494	PACKING CASE(SYSTEM)	1	(EB)
P4	RPG4493	PACKING CASE(SYSTEM)	1	(EG)
P5	RPQ0951	PAD(SYSTEM)	1	
P6	SPP740-1	SHEET	1	

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AD9912262S6
A6

Service Manual

Tuner/Amplifier

Supplement

SA-DV100
SA-DV150

Colour

(S)	Silver

Area

(EB)	Great Britain
(EG)	Germany
(GC)	Middle East and South Africa
(GCP)	Latin America
(GCS)	Asia
(GK)	China
(GN)	Oceania
(PP)	U.S.A and Canada

Subject : Modification of Capacitor
(To improve product quality, the capacitor has been changed to one with minimal capacity change due to temperature fluctuation.)

This document is supplementary to the following Service Manuals.

Model No.	Area Code	Order No.	Colour	Brand
SA-DV100	(GK)	AD9908189C3	(S)	Panasonic
SA-DV150	(EB, EG)	AD9907165C2	(S)	Panasonic
SA-DV150	(GCP, GCS, GK)	AD9907171C3	(S)	Panasonic
SA-DV150	(GC, GN)	AD9907171C3	(S)	Technics
SA-DV150	(PP)	AD9906141C1	(S)	Panasonic

⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

1 Replacement Part List

Ref. No.	Change of Parts No.		Part Name & Description	Remarks
	Original	Supplement		
CAPACITOR(S)				
C552	ECBT1E103ZF	ECBT1C103NS5	CAPACITOR, 25V 0.01µ	
C709	ECBT1H104ZF5	ECBT1H104KB5	CAPACITOR, 50V 0.1µ	

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